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THE UNDERGRADUATE TEACHING OF GASTRO-ENTEROLOGY IN AMERICAN MEDICAL SCHOOLS

CHAIRMAN'S ADDRESS

ALBERT F. R. ANDRESEN, M.D.
BROOKLYN

The question whether gastro-enterology is a specialty or whether the care of diseases of the digestive tract and nutrition should be left entirely to the internist is one that has caused much controversy. In this connection it must be realized that the properly trained gastro-enterologist must be first a competent internist and must in addition have devoted much time to a special study of gastro-enterologic subjects, including the basic sciences, physiology, biochemistry, pathology, laboratory work, roentgen diagnosis and nutritional problems. The large numbers of clinicians applying for admission to postgraduate courses in gastro-enterology wherever they are presented is evidence of the importance of the subject and the lack of information in regard to it. The difference in results obtained in the treatment of gastro-intestinal disorders by the gastro-enterologist as compared with the general internist is so marked that the medical profession in general has long recognized the value of special care in these diseases, and it is to be hoped that soon even the general internist will cease to be prejudiced against this specialty. With the much less important and no more technical branches of internal medicine, neurology and dermatology, recognized as specialties, it is strange that gastro-enterology should be so generally unrecognized.

The prejudice against the gastro-enterologist has, unfortunately, projected itself into the medical schools, where prejudice and petty jealousies are so much to be deplored. It has resulted in a neglect of the teaching of subjects pertaining to the gastro-intestinal tract, even in the early, preclinical years, where gastro-intestinal physiology today receives entirely inadequate attention and the student's time is largely wasted in the intensive study and contemplation of nerve-muscle reactions and abstruse biochemical problems.

One of the most important studies entered into by the Commission on Medical Education, organized in 1925 by the Association of American Medical Colleges, the final report of which was published in great detail in 1932 in a book of 600 pages, is the study of the frequency of occurrence of various symptoms as determined by the tabulation of the chief complaints of large numbers of patients applying for care in hospitals and their clinics, industrial clinics and the offices of general practitioners in all parts of the country, supplemented by the study of the nature of disabling illnesses, the causes of death and the observations in health examinations such as school and factory surveys and the draft. A few sample tables taken from this book are shown in the accompanying tables, which have been chosen as being representative of the average. A study of the relative frequency of the chief complaints or illnesses of patients in ten separate studies presented in the tables of this book shows that gastro-intestinal complaints average between third and fourth places in relative frequency, being exceeded regularly only by minor surgical conditions, infections of the upper respiratory tract and venereal diseases. Logically, therefore, a medical education should aim to prepare a student adequately to handle these most important conditions. Yet what does one see in the average curriculum? The first two, preclinical, years are spent largely in the study of technical problems, taught in many schools by experts who are not physicians, and in most cases not only not correlated with clinical teaching but not even of value to the student in his subsequent study of clinical medicine, and the clinical years often devoted to intensive courses in some less important phases of internal medicine, with an entirely inadequate consideration of problems pertaining to digestive diseases.

In a questionnaire recently sent to the eighty-five class A medical schools in the United States and Canada, sixty-eight sent complete answers to a list of six questions propounded. Eight of the schools answering were so-called two year schools, giving only the preclinical course, and the authorities of these schools emphatically disclaimed any attempt at correlation between their teaching and that of clinical gastro-enterology. Of the sixty regular schools from which answers were received, only thirty-five, or 58 per cent, stated that there is such a correlation in their courses in the first two, preclinical, years. Only three schools were listed as presenting clinical lectures on gastro-enterology in their preclinical years. Is not this neglect of gastro-enterology surprising when it is realized that preclinical studies include biochemistry, which covers the study of digestion and nutrition; of physiology, the most interesting phase of which is undoubtedly a study of the digestive processes; of bacteriology, with the most prolific culture medium provided by nature in various parts of the digestive tract; and of pathology, the practical application of which consists largely in the diagnosis of tissue specimens or tumors removed from the gastro-intestinal tract? A survey of the work of the schools failing to show any such correlation between clinical and preclinical instruction shows that these are the schools in which not only is there no separate department for the teaching of gastro-enterology but in which the teaching of gastro-enterology is considered a relatively unimportant part of the course in medicine.

Read before the Section on Gastro-Enterology and Proctology at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 14, 1934.

Of the sixty schools answering the questionnaire, only six, or 10 per cent, reported that they have a separate unit for the teaching of gastro-enterology. In four of these schools there is an established chair of gastro-enterology and the professor of this department has a staff of competent assistants giving a properly coordinated course in his subject, including the laboratory, clinical and roentgenologic phases of the work, as well as practical instruction in dietetics. In two schools a similar course is supervised by a clinical professor of gastro-enterology and an individual designated as "clinical professor of medicine (gastro-enterology)," respectively. In the other fifty-five schools the instruction in gastro-enterology is given by the department of internal medicine as a part of its course, the titles of the instructors ranging from professor to instructor in medicine. In more than a score of these schools these teachers are nationally known gastro-enterologists, but in most instances the time allotted to them is insufficient

TABLE 1.—*The Ten Most Common Disabling Illnesses, by the Number of Cases* *

	Study 1	Study 2	Study 3	Study 4	Study 5
1.	Colds and bronchial conditions	Colds and bronchial conditions	Colds and bronchial conditions	Colds	Colds and bronchial conditions
2.	Influenza and grip	Digestive diseases and disorders	Influenza and grip	Influenza	Headache and neuralgia
3.	Digestive diseases and disorders	Diseases of pharynx, tonsils and larynx	Digestive diseases and disorders	Measles	Diseases of pharynx, tonsils and larynx
4.	Diseases of pharynx, tonsils and larynx	Diseases of nervous system	Nonvenereal diseases of genito-urinary system and adnexa (chiefly dysmenorrhea)	Mumps	Digestive diseases and disorders

Study 1 was made at Hagerstown, Md., by the U. S. Public Health Service for twenty-eight months, Dec. 1, 1921, to March 31, 1924.
Study 2 was a study of employees of the Edison Electric Illuminating Company, Boston, by the U. S. Public Health Service for ten years ended Dec. 31, 1924.
Study 3 was a study of workers by the U. S. Public Health Service for the year ended Jan. 31, 1921.
Study 4 was a study of school children in Missouri by the U. S. Public Health Service during 1919-1920.
Study 5 was a study of school children in Hagerstown, Md., by the U. S. Public Health Service, December 1921 to May 1923.

* From "Final Report of the Commission on Medical Education," 1932, upper half of table.

for adequate instruction in their important subject. In six schools clinical teaching is attempted in a short, and often an elective, course in a gastro-enterologic clinic.

Inquiry as to the hours devoted to the teaching of gastro-enterology showed three schools giving only an elective course in this subject and twenty-two reporting that no definite number of hours is assigned. Instruction in this subject is given in the junior year in eighteen, or 20 per cent, of these schools, the total number of teaching hours varying from eight to twenty. Thirty-five schools devoted from eight to twenty-two hours to the teaching of gastro-enterology in the senior year. The total number of hours in the entire medical course given to the teaching of disease of the digestive tract averaged twenty-seven hours, which is less than 4 per cent of the time devoted to the teaching of internal medicine in the average medical school. The survey shows no improvement in the situation since the studies of this subject by Simon [1] and by Lucas [2] in 1925 and 1926, respectively. How evident it is that the work of the Commission on Medical Education is being ignored!

1. Simon, S. K.: Teaching of Gastro-Enterology in Our Medical Schools, J. A. M. A. **87**: 73 (July 10) 1926.
2. Lucas, C. G.: Present Status of Gastro-Enterology in Medical Schools, Tr. Am. Gastro-Enterol. A. **29**: 6, 1927.

The interpretation of roentgenologic observations constitutes a very important part of gastro-enterologic diagnosis. An inquiry regarding the teaching of this subject was therefore included in the questionnaire. All of the sixty schools are attempting to teach something about gastro-enterologic roentgen diagnosis, the roentgenologist being the teacher in fifty-six, or 93 per cent, of the schools. In six schools the gastro-enterologist, and in five the internist, is collaborating with the roentgenologist in this instruction, and in two the gastro-enterologist alone is the one to cover this subject. In one school a physical therapist is designated as the one to teach this important branch of diagnosis. In most schools this instruction is haphazard, with no definite time devoted to it.

If there is one subject, aside from gastro-enterologic diagnosis, about which the average general practitioner is very poorly informed, it is the subject of dietetics. Most of the diets prescribed for patients are based on superstition, on individual fancies, on information obtained from literature advertising freak food products or merely on the simple principle that the food an ailing patient enjoys and has been in the habit of eating must be bad for him and should be forbidden. Such freakish and unscientific diets as are broadcast on the air and in the press by charlatans who are actuated only by greed would not find favor with the public if the family doctor gave more specific instructions to his patients than to advise against the ingestion of starchy or greasy foods. Specific instructions in regard to diet necessitate some knowledge of the principles of dietetics. In only forty-two, or 70 per cent, of the sixty medical schools is there any definite attempt at teaching dietetics, and an analysis of the methods of teaching shows that in most schools it is entirely inadequate. In eleven of these schools a dietitian, not a physician, is the sole instructor in this subject. In twelve an internist and in four a biochemist does this work, and in twelve no definite instructor is designated. Ten schools, 17 per cent of the total number answering the questionnaire, designate the gastro-enterologist as the one responsible for the teaching of dietetics. None of the schools give an adequate amount of time to the subject except possibly one, where thirty-six hours of the second year is devoted to dietetics.

It is quite evident that something is wrong about the teaching of gastro-enterology in the medical schools. The statistics obtained after seven years of painstaking work by an eminent commission show that digestive diseases stand third or fourth in the order of frequency of occurrence in a variety of studies. They are an important cause of disability among workers, furnish surgeons with a considerable part of their operative work, and contribute an appreciable amount to the income of undertakers. The preliminary reports of the commission were made available to the medical schools from time to time during the seven years of its work, although they were not published in book form until 1932. Doctors are returning to their medical schools or applying at postgraduate schools, demanding postgraduate instruction in gastro-enterology. The public is turning to quacks and charlatans for its advice in regard to digestive disorders. And what are the medical schools doing about it? It has been shown in the analysis attempted in this study that less than 4 per cent of the time in teaching hours devoted to the teaching of internal medicine is assigned to instruction in diseases of the digestive system and nutrition. An

entirely disproportionate amount of time is devoted to subjects of distinctly less importance, such as neurology, psychiatry and dermatology. Even in the preclinical years the digestive system seems to be shunned, only a small proportion of schools giving a course providing an adequate foundation of knowledge on which to build a clinical conception of the diseases of the digestive tract. And correlation between preclinical and clinical instruction is either not attempted or is ephemeral. What is to be done to correct this gross neglect of an important subject? It is evident that an increased number of teaching hours must be devoted to this subject and that the instruction must be planned and carried out by clinicians who have a proper grasp of the needs in this important branch of internal medicine. Gastro-enterology should not be taught as a specialty, as is unfortunately so commonly being done in the case of other medical specialties. The teaching must be integrated with that in internal medicine, in surgery, in roentgenology, in clinical laboratory work, in preventive medicine and even in obstetrics. In the preclinical years adequate time devoted to the anatomy, physiology, chemistry and pathology of the digestive system is not the only need. There must be a correlation between the teaching in these sciences, not only in respect to the need for a preliminary consideration of anatomy, followed by simultaneous instruction in the physiology and chemistry of the digestive functions by these two departments, but by definite attempts at integrating the teaching through combined lectures. These should, of course, precede a consideration of pathology of the digestive organs. During the period devoted to this instruction occasional lectures by clinicians, showing the practical application to the practice of medicine of the knowledge just acquired, will do much to fix in the student's mind the salient facts in regard to the subject, making it much easier, in the clinical years, to return to a consideration of these fundamental problems. In the clinical years a preliminary didactic or quiz course outlining the principles involved in the diagnosis and treatment of digestive tract diseases, preferably given in collaboration, or at least simultaneously, with courses in clinical laboratory and roentgenologic diagnosis, should precede the student's actual contact with patients and will save much time in clinical teaching. Realizing that most patients with gastro-intestinal disorders are ambulatory, the time devoted to clinical teaching in a well organized gastro-enterologic clinic should be greater than that given to ward clerkships. It must be realized that a short period of intensive work in one subject, with the ability to follow a few actual patients through a period of diagnosis and treatment, is infinitely more valuable than many scattered hours devoted to many different subjects, and single contacts with a variety of patients.

In regard to the personnel to whom should be entrusted the teaching of this important subject, the report of the commission gives considerable space to the subject of specialism as applied to teaching, and the following extracts from this report seem relevant to this branch of the subject:

"Specialization is necessary in the diagnosis and treatment of some patients and in research, but the educational needs of the student are general in character. Over-teaching in technical fields of science or practice interferes with laying the foundation of learning in the subjects every physician should know. The teaching in the specialties should be integrated with that in general medicine, surgery and obstetrics" (page 200).

"A unified plan of instruction properly carried out should heighten the interest of students in the contributions which the special fields can make to general medicine and surgery" (page 201).

"Emphasis should be laid on the general character of the training to be secured and upon the fact that specialists can make contributions to the training of the student which can not be satisfactorily obtained in any other way. The various specialties have distinct fields in medical practice and to them must be credited much of the advance in knowledge in recent years. No effort to curtail their development or recognition is implied in the suggestion that they should be used only as they contribute to the general training of the student" (page 201).

"Specialists trained in the technic and experienced in dealing with the diseases common in their domain should conduct the teaching in these fields. A study of the work of specialists shows clearly that many of the demands for their services are essentially general in character and that a properly trained physician should be competent to deal with many of the conditions met" (page 202).

These extracts from the commission's report present an admirable and unbiased view of the importance of having specialists do the undergraduate teaching in their fields. The specialist, who is most apt to see the mistakes made by the general practitioner, should realize most acutely what the educational needs of the student must be. It is necessary for him however to concentrate in his teaching particularly on the general phases of his subject, leaving the most technical considerations to postgraduate study. The student must be taught to recognize the more common, easily treated

TABLE 2.—*Grouping of Diagnoses Reported by General Practitioners* *

Office Visits	
Minor surgery	20.6%
Upper respiratory tract infections	15.1
General medical diseases	14.3
Venereal diseases	6.3
Gastro-intestinal disorders	5.3
Throat infections	4.1
Vaccinations, inoculations	3.6
Physical examinations (95% for life insurance)	3.4
Gynecology	3.3
Skin diseases	3.2
Urogenital diseases (including pyelitis)	3.0
Obstetrics	2.4
Nervous disorders	2.4
Syphilis	2.3
Eye conditions	2.3
Infant feeding	1.6
Tuberculosis	1.6
Contagious diseases	1.5
Ear infections	1.3
Nose and sinus infections	1.3
Major surgical conditions	1.1
	100.0%

(Note.—Study embraces one million visits.)
* From "Report of Commission on Medical Education," 1932.

TABLE 3.—*The Most Important Nonreportable Diseases in New York State in 1927* *

Colds, bronchitis and grip	Gynecologic cases Operative Nonoperative
Digestive disorders (excluding diarrhea and enteritis, under 2 years)	Heart disease
	Arteriosclerosis
Surgical cases—operative, traumatic (excluding gynecologic)	Chronic arthritis
	Acute rheumatic fever
Neuroses	Diarrhea and enteritis (under 2 years)
Diseases of children (excluding communicable and those listed elsewhere in this table)	Bright's disease (chronic interstitial nephritis)
	Appendicitis
Tonsillitis	Gonorrhea

* Reports to the New York State Board of Health. From "Report of Commission on Medical Education," 1932.

diseases in the realm of the specialist and the type of case requiring special study and care. The high mortality from such diseases as acute appendicitis, acute intestinal obstruction and even gastro-intestinal carcinoma can be attributed ordinarily to inadequate instruction in the medical schools, and the awe with which the average general practitioner contemplates a diagnosis of such common and relatively simple diseases as peptic ulcer and gallbladder disease may be similarly attributed to a lack of familarity with those conditions which should be acquired during his medical course.

In an effort to suggest an improvement in the teaching of gastro-enterology in medical schools I present with all diffidence, and with a realization of its shortcomings, the following outline of a comprehensive course covering the disorders of digestion through the average four year course in medicine. The instruction should be planned and carried out by trained gastro-enterologists functioning as a separate department.

A PLAN FOR THE TEACHING OF GASTRO-ENTEROLOGY

First and Second Years:

Anatomy: Instead of isolated studies of the various parts of the digestive tract, a definite course should be given in the anatomy and histology of the tract as a whole, from mouth to anus, demonstrating the accessory organs, the relations to other organs and the innervation of the tract. This course could be greatly aided by a roentgen study of the barium-filled gastro-intestinal tract preceding dissection of this tract.

Biochemistry: The chemistry of digestion and nutrition should be taught in a way to emphasize its importance from the clinical standpoint and the course should immediately precede the consideration of the functions of the digestive tract by the department of physiology.

Physiology: The study of secretion, digestion and nutrition should supplement and amplify the information obtained in the course in biochemistry. The neurologic control of the digestive functions should be studied in an orderly way. The motility of the gastro-intestinal tract can best be taught in an efficient and graphic way by means of fluoroscopic observations, by small groups of students, of one of their number who will volunteer to take a barium meal.

The bacteriology and pathology courses have as a rule been quite adequate. Pathologic conferences in later years, in conjunction with the department of internal medicine, help to crystallize the knowledge previously obtained.

Pharmacology and Materia Medica: A short time given to the effects of drugs on the functions of the gastro-intestinal tract would do much to dispel the many misconceptions in regard to this subject.

During these courses of the first and second years, an experienced gastro-enterologist should give an occasional clinical lecture or demonstration illustrating the practical application of what the student has just learned to the practice of medicine. This will help to fix the subject in the student's mind and will simplify later instruction in clinical medicine. At least two or three such lectures should be given each year.

Third and Fourth Years:

Lecture Course: A preliminary course of at least twelve lectures covering the general principles involved in gastro-enterologic diagnosis and treatment and a brief consideration of the principal, common, diseases of the digestive tract should precede the clinical courses.

The course in clinical laboratory procedures should include a practical consideration of gastric analysis, examination of duodenal contents and stool examinations.

There should be, if possible, a period of at least six or eight weeks during which the students in small groups attend regularly a thoroughly organized gastro-enterologic clinic, where they can become trained in careful history taking and physical examination and can observe and assist at the clinical laboratory tests, roentgenologic studies and therapeutic procedures.

In the hospital clinical clerkships, care must be taken that each student gets a fair proportion of gastro-enterologic cases. Conferences between the small groups of students and the attending gastro-enterologist who is in charge of the patients to whom the students have been assigned should consist of the reading of history and physical and laboratory observations by the student, a review of the literature on the subject of the patient's disease which the student has looked up in the library, a demonstration of x-ray films of the patient and of similar cases, a discussion of the possibilities in diagnosis, and an outline of the treatment and operative indications. Where possible, specimens from the pathologic museum should be used to illustrate the character of the lesion. The student, in his record of the case, should make continuation notes, and he should be given time to follow his patient into the fluoroscopic room, the examining rooms of other special departments and, in operative cases, into the operating room. Preoperative and postoperative care must be taught by actual demonstrations on patients.

Dietetics, the biologic principles of which have been taught in the early biochemistry course, should be discussed in detail by the gastro-enterologists and internists in the course of their clinical teaching, should be covered in principle in a few special lectures by these instructors, and should receive practical consideration in a brief course in the diet kitchen, where the preparation of foods and their arrangement into suitable diets can best be demonstrated. Bedside observation of the diets of patients at meal hours is also a valuable aid in teaching.

Gastro-enterologic roentgen diagnosis, begun in preclinical years when the study of normal anatomy and physiology was clarified by film and fluoroscopic studies of the gastro-intestinal tract, should be taught to small sections of students by means of observations in the fluoroscopic room, guided by a competent roentgenologist and preferably also by a gastro-enterologist, and by a demonstration of groups of films by the roentgenologist. This work will supplement the demonstration of films of actual patients under the student's observation in the clinic or the hospital ward.

During the clinical years an occasional amphitheater clinic which the whole class can attend, given by the head of the gastro-enterologic department or by a visiting gastro-enterologist, will help to stimulate interest in gastro-enterologic problems. Lectures or clinics held in conjunction with the departments of surgery, obstetrics and pediatrics will help to emphasize the importance of a broad outlook in the consideration of gastro-intestinal symptoms.

COMMENT

The course in gastro-enterology outlined, while at first glance appearing to be too complicated and lengthy for practical consideration, can really be covered in a surprisingly small number of hours. It must be remembered that this should not be in the nature of an intensive postgraduate course, but its aim should be to acquaint the student with the symptoms of the most common gastro-intestinal diseases, the methods of study and the principles underlying treatment. A constant reference to the physiologic principles involved helps to fix the subject in the student's memory and makes it easier for him to work out his own cases. The preclinical work will involve no extra expenditure of time but merely a rearrangement of present schedules. The time devoted to gastro-enterology in the clinical years should consist of from twelve to fifteen hours of preliminary lectures and from four to eight hours of later clinical lectures to the entire class. The minimum number of hours spent in the gastro-enterologic clinic should be from twelve to fifteen. The exact time devoted to ward assignments cannot be accurately estimated, but the small group conferences should embrace at least twelve to sixteen hours, and the dietetic and roentgenologic conferences should take another six to twelve hours. Our plan, therefore, for a unified study of gastro-enterologic problems involves

the assignment of at least forty-six hours to this subject, which is still considerably less than 10 per cent of the time devoted to internal medicine in some schools and less than 5 per cent in many. The importance of the subject would surely warrant the expenditure of at least 15 or 20 per cent of the time, and it is to be hoped that the day will come when the average medical school will devote at least 100 hours to the teaching of gastro-enterology.

SUMMARY

1. The importance of gastro-enterology as a teaching problem has been demonstrated by the Final Report of the Commission on Medical Education in its conclusions in regard to the prevalence of digestive diseases in general practice.

2. The medical schools of the country have not yet become cognizant of its importance, and the teaching of this important subject is wofully neglected in all but a few of the schools.

3. The commission has called attention to the value of having the specialist do the teaching in his special subject, and this applies with special force to the teaching of gastro-enterology.

4. An adequate course in gastro-enterology should include a correlation between preclinical and clinical teaching and integration with the courses in internal medicine, surgery, obstetrics and other specialties.

5. A plan for the the teaching of gastro-enterology is presented, which involves a minimum of forty-six hours devoted to this subject and a recommendation for a larger number of hours wherever this is feasible.

88 Sixth Avenue.

POSTGRADUATE DERMATOLOGIC TRAINING

ITS RELATIONSHIP TO CERTIFICATION OF SPECIALISTS IN DERMATOLOGY

CHAIRMAN'S ADDRESS

C. GUY LANE, M.D.

BOSTON

The supervision of specialism with emphasis on certain educational aspects was discussed in detail before the American Dermatological Association last year by Dr. Fred Wise in his presidential address. Since that time there has developed a certain amount of misunderstanding concerning the objects and work of the American Board of Dermatology and Syphilology, so that it seems worth while to review some phases of the board's activities and particularly its relationship to postgraduate training in dermatology and syphilology.

OBJECTS

The board has been established with the object of improving standards of practice in dermatology and syphilology. In furthering this aim it is necessary to determine the competence of physicians who specialize in dermatology and syphilology. This entails the determination of adequate standards of fitness, the conducting of investigations and examinations to test the qualifications of voluntary applicants, and the granting of certificates to those applicants who successfully fulfil the established requirements. For the benefit of hospitals, medical schools, other physicians and the lay public the board will make available lists of those physicians who have been certified by the board. Other boards which antedate ours have found that in order to accomplish their purposes it has been necessary to study and attempt to improve the facilities which provide instruction in their particular fields, and it is one of the objects of this board to survey the postgraduate facilities for training in dermatology and syphilology. It is expected, as a result of the work of this board, that better undergraduate and postgraduate training facilities, both clinical and laboratory, will be furnished, that better dermatologists will be provided as a result of this training, and that as an ultimate result greater progress in the scientific attack on skin disease will be made and better service will be rendered in dermatology and syphilology by both the specialist and the general practitioner.

ACCOMPLISHMENTS

In the year and a half since its actual formation, the board has become incorporated and developed its program. It has investigated the methods used by the other boards and it has developed methods of procedure on the basis of experience of these boards. It has also considered thoroughly standards to be expected of individuals in practice for a varying length of time. It has received 221 applications and has held three meetings. At two of these meetings the board has examined forty-nine applicants. More than 190 certificates have been issued. A list of those certified by the board has already been published, and further lists will be issued from time to time.

The board has also initiated an educational survey based on certain standards of postgraduate training in dermatology and syphilology which are acceptable to it. Briefly, this standard, at present, provides for at least two years of well planned intensive training in the clinical, laboratory and therapeutic branches of dermatology and syphilology. Approved postgraduate training should include (1) adequate clinical and laboratory facilities, (2) properly supervised instruction under a staff of approved dermatologists, (3) opportunities for properly supervised research work, and (4) access to adequate dermatologic literature.

Among its other accomplishments may be mentioned participation of this board in the formation of the Advisory Board of Medical Specialties, which plans to coordinate the work of the various specialty boards and those organizations interested in medical education, especially postgraduate education. These accomplishments indicate to a slight degree the importance of the work to be performed by the board. Of additional significance is the fact that the American Dermatological Association has already voted to require a certificate of all new members admitted after 1935. A representative of the American Hospital Association stated last winter that an attempt has been started toward the adoption of a similar resolution for staff appointments in the various hospitals belonging to this association. It seems probable that medical school faculties may adopt a similar requirement.

SOME MISUNDERSTANDINGS

One of the points on which confusion has arisen is in regard to the use of the word "license." The term license implies governmental or municipal restrictions, or some legal qualifications, but no license to practice dermatology or syphilology is even considered by the board, as it has nothing whatever to do with the licensure of specialists. In the second place, there has been some confusion concerning the American Board of

Read before the Section on Dermatology and Syphilology at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 13, 1934.

Dermatology and Syphilology and the American Dermatological Association. The board is related to the latter association only as it is related to the Section on Dermatology and Syphilology of the American Medical Association. The board was formed as a result of the reports of committees appointed by both of these organizations, and each of them contains equal representation on the board. Thirdly, no one is compelled to apply for a certificate issued by the board. The establishment of the board affords an opportunity for physicians desiring to become accredited specialists to make application voluntarily, present credentials, take examinations (if such are deemed necessary), and receive a certificate (if their credentials and examination are satisfactory) as a diplomate of the American Board of Dermatology and Syphilology. Fourthly, a physician obtaining this certificate does not become a member of the board. The members are the representatives designated by the two component societies. The term "diplomate" is applied to a physician who fulfils the requirements of the board and receives a certificate. The work of our board in the field of dermatology and syphilology parallels the work of the National Board of Medical Examiners in the field of general medicine. The formation of national specialty boards will obviate the confusion that might arise from the establishment of a number of state licensing boards for specialists, a plan that has previously been proposed. I do not mean that it will be possible to prevent eventually the licensing of specialists in this country as it is done in other countries, but the work of the board should go a long way in determining physicians properly prepared for admission to the practice of this specialty.

TABLE 1.—*Age Groupings of Diplomates*

30 to 39 years	27
40 to 49 years	47
50 to 59 years	44
60 to 69 years	20
70 plus years	1
Total	139

RELATIONSHIP TO POSTGRADUATE DERMATOLOGIC EDUCATION

With this statement of the board's activities I turn to its relationship to postgraduate dermatologic education. In this connection it has seemed advisable to ascertain the type of postgraduate training received by the diplomates of this board up to January 1 of the present year. The application blanks of these 139 diplomates are only a small number on which to make generalizations, but I feel that a study furnishes sufficient information to aid as a guide for a short period in a project on which today little information exists.

A study of these application blanks shows that the oldest is 72 and the youngest 30 years old. The age grouping is given in table 1.

It was also noted that fifteen of these applicants have been graduated from medical schools outside the United States and that ninety, or 65 per cent, had had some general practice, varying from one to twenty-five years. The great majority of these (88 per cent) had held internships in hospitals previous to their specialized training. One hundred and one diplomates are teaching dermatology and syphilology in class A medical schools; fifteen have held such positions, and only twenty-one, or 15 per cent, have had no teaching experience.

It has been difficult to develop data in regard to the length of training in this group. In many cases the exact month and year have not been stated, and the period of training has overlapped the beginning of private practice. In addition, many men obtained their training on a part time basis and it is difficult to compare such training with that received as full time assistant or resident. Table 2 shows the best approximation it was possible to make from the study of these applications.

For the purpose of studying the postgraduate training, the application blanks have been reviewed on the basis of years of limitation of practice to dermatology and syphilology (table 3).

There are certain facts about each of these groups of various lengths of practice which it is of interest to detail briefly. Of the three individuals in group I, two spent from one and one-half to two years in postgraduate work abroad, and two of them spent further time as assistants on their return home.

Of the three who have practiced from thirty-five to thirty-nine years, two (or 60 per cent) spent from one and one-half to two years abroad in work, and two were assistants to well known dermatologists for a period of years.

Nine have practiced from thirty to thirty-four years. Seventy-five per cent studied abroad from eight months to almost three years. Six of these individuals had been in general practice for from one to eleven years before going into the specialty.

Of those practicing from twenty-five to twenty-nine years there were fourteen, and twelve (or 85 per cent) of these spent from seven months to two years abroad. In this group eight were recruited from the ranks of general practitioners. At the same time it is worth noticing that four of these individuals had held special internships for skin diseases.

In group V, sixteen in number, only one half took their training abroad and a larger percentage, twelve, had previous experience as general practitioners. The average time spent abroad in this group was distinctly shorter than in any of the former groups.

Of the fifteen to nineteen year group of twenty-six physicians, only seven spent any time abroad. It is to be remembered that this group began their training during the war and the facilities for postgraduate training at that time were greatly disrupted. Five of these men held residencies or internships and twenty-one had had general practice for from two to nineteen years before entering dermatology.

TABLE 2.—*Length of Training*

Training Period	Number
4 years or more	34
3 to 4 years	18
2 to 3 years	41
1 to 2 years	20
6 to 12 months	19
Uncertain	7
Total	139

The largest group of all is the ten to fourteen year group of forty-two physicians. Only six of these individuals had any training abroad and that training in general was for short periods. In this group two other tendencies are noticeable. About 25 per cent of the men took internships or residencies as the major part of their training. About half the men, twenty-two in all, received their training as assistants to well

known dermatologists, together with experience in clinics which their chiefs controlled. There was a falling off in the percentage that entered from private practice, only twenty-eight having had previous general practice experience. There were also a number who signified their taking of short postgraduate courses as a part of their training.

TABLE 3.—*Limitation of Practice*

Group	I	40 to 45 years of practice	3	
	II	35 to 39 years of practice	3	
	III	30 to 34 years of practice	9	
	IV	25 to 29 years of practice	14	
	V	20 to 24 years of practice	16	
	VI	15 to 19 years of practice	27	
				72
	VII	10 to 14 years of practice	42	
	VIII	5 to 9 years of practice	25	
				67
		Total		139

In the youngest group, those in dermatologic practice for from five to nine years, there were twenty-five men, and of these six men received their training abroad, and several of them for relatively long periods. The limits were from six months to four years. A still larger number, sixteen, or 64 per cent, received their training as assistants in the offices of well known men. Seven held residencies or internships. Fourteen of these men, or 56 per cent, had had previous experience as general practitioners. Five of the men in this group have received their training in institutions conferring a degree of Master of Science in Dermatology or Doctor of Medical Science. This is another new development in the training methods for dermatologic practice. About half, or seventy-two, of these diplomates have limited their practice for fifteen years or more, and sixty-seven have limited their practice for from five to fourteen years.

SOURCE OF TRAINING

In reviewing these applications and the training that was received for specialization in dermatology and syphilology it is apparent that these methods of training can be divided roughly into five groups (table 4). There is, of course, much overlapping, and certain individuals will perhaps have received training in several of these different groups, but in general such a grouping can be clearly made out.

First, there is the group of those physicians who have studied outside the United States. Fifty-one diplomates, or 36.6 per cent, received some training in other countries. This training has usually been taken early in their dermatologic career, but eleven of the men went abroad later for short courses of training, usually of a few months' duration. Twenty-nine received the major portion of their dermatologic training abroad, the majority of them for more than a year. Eighteen were abroad for from four to twelve months, and twenty-one for more than a year. Some of these became assistants to well known dermatologists on their return, and a few entered a residency or internship in addition to an assistantship. I have already called attention to the smaller percentage of men going abroad since the war.

In the second group are fifty-six diplomates, or 40 per cent, comprising those physicians who have received their training for the most part as assistants to well known dermatologists, usually for a period of from one to five years. At the same time they have had training in the clinics of their chiefs. The number of younger men in this group, thirty-three, with less than fifteen years of limitation of practice, indicates a distinct tendency on the part of the younger specialist to obtain his training in this country in direct relationship to some one of the older and more experienced men. Ten of these men also had short courses of graduate training abroad for usually less than one year's duration. Twelve diplomates had held a residency before the assistantship.

The third group, twenty-six in number, or 19 per cent, includes those physicians who have served for a definite time in a hospital with beds for the care of skin and syphilis patients and have there received a specialized training in this field. These positions have been spoken of variously as internships, residencies or fellowships. The duration of this service has ranged from six months to three years. Many of these individuals on the completion of their residency or internship have become assistants to well known dermatologists. There are also a few who have taken work abroad after the completion of their residency for a period averaging from six to eight months. The 1931 Directory of the American Medical Association contains a list of twelve hospitals in which residencies for dermatology are maintained. Not all of these, however, can be relied on for adequate training, and the list omits certain institutions where even better training can be obtained under the title of Fellows. The training which this group has received has been for the most part obtained at the Skin and Cancer Hospital in New York, the Mayo Clinic, the University Hospital at Ann Arbor, the City Hospital and Lakeside Hospital in Cleveland, the Barnard Skin and Cancer Hospital at St. Louis, and the Massachusetts General Hospital in Boston.

The fourth group includes only five men, but their training is a definitely forward step in postgraduate teaching. These men have obtained a Master of Science in Dermatology or a similar degree from the postgraduate department of a medical school on the completion of from two to three years of study. This period has included rather strict supervision of clinical and laboratory activities, together with the satisfactory completion of a regularly outlined program and the acceptance of satisfactory research work. This degree is at the present time awarded by only five institutions; namely, University of Pennsylvania, University of Michigan, University of Minnesota, Columbia University and Northwestern University. The University of Illinois also issues an M.A. on the satisfactory completion of one year's work.

TABLE 4.—*Source of Training*

	Total	Practice Limit 15-45 Years 72		Practice Limit 5-14 Years 67	
Abroad	51	39	18 (4 to 12 mos.) 21 (1 year plus) 9 (later)	12	4 (2 to 12 mos.) 4 (3 yrs. plus)
Assistantships	56	23 (1-7 yrs.)	In addition 6 studied abroad 5 held residencies	33 (9 mos. to 5 yrs.) (3 below 1 yr.)	In addition 7 held residencies 2 studied abroad
Residencies and fellowships	26	12 (1-3 yrs.)	In addition 3 studied abroad 4 held assistantships	14 (1-3 yrs.)	In addition 6 held assistantships
Master of science	5	0		5	
Clinical experience	35	18		17	

The applications that do not fit into any of these four groups are thirty-five in number, about 25 per cent. The applications show that practically all these men obtained most of their training by clinical experience in skin and syphilis clinics, often supplemented by short courses in large centers. The older and younger groups previously considered are represented equally among these applications. Only three of these men have had any training abroad. Twenty-four of these men, or two thirds, had, in addition to their clinical experience, courses of postgraduate training in larger hospitals. Twelve of them have taken courses of less than six months' duration, the rest of them signifying varying periods of training up to two years. It was also found in these twenty-four who have taken courses that the older and younger groups were again equally divided. There were ten diplomates who had received their training from clinical experience alone, with an equal number in both the older and younger groups. A few of them have also held assistantships for short periods. It is interesting to note that twenty-five of this whole group are at the present time teaching in class A medical schools, the great majority of them with a professorial rank.

COMMENT

In the first place, as one reviews these data, one is impressed with the high percentage of specialists who received their training abroad twenty-five years ago or more. Following this came a very complete falling off in postgraduate training abroad during and shortly after the war, with a return in the last ten years to postgraduate study abroad, 25 per cent of the younger men seeking such facilities and in this time remaining abroad for study for longer periods than before.

In the second place is to be noted in the last fifteen years the development of postgraduate training as assistants to well known men in our field.

Thirdly, there is a rise in the internship or residency or fellowship as a factor in postgraduate teaching due to the greatly increased facilities made available in this country and the tendency toward specialization.

Fourthly has come perhaps the most striking development, the awarding of a postgraduate degree, Master of Science in Dermatology. This recognition of a satisfactory period of training, perhaps in connection with a fellowship, will become more general, I believe, as postgraduate medical education expands and improves under the guidance of class A medical schools. It is to be hoped that funds will become available as time goes on so that more physicians of high caliber interested in the specialty and deserving of such training need not depend on clinical experience alone.

One notes also that 25 per cent of these applicants have obtained their training in dermatology on the basis of clinical experience, usually supplemented by courses in some larger institution. Two thirds of these men have received a teaching position in dermatology in a class A institution, the great majority with a professorial rank. Financial reasons are undoubtedly the main factor in determining this choice of training. Long clinical experience may provide sufficient training for safe practice in a specialty but it does not provide the knowledge of fundamentals needed for well rounded practice in a special field. If postgraduate work also is taken, and trips to large clinics for short periods are made at intervals, such men may keep abreast of progress in a specialty. At the same time such a man is always more or less handicapped by a relatively incomplete start, and it is probable that some one of the other four methods described will furnish a distinctly better fundamental training. It is not possible to say at the present time which of these methods is the best. A great deal, of course, depends on the characteristics of an individual as it does in any profession or business, and the fact that so many men have attained teaching positions in the last group, I believe, points fully as much toward the individual as a factor as to the training that he received. In other words, these individuals would probably have been better specialists if they could have had one of the types of training cited. It would seem better, therefore, to insist on better standards of fundamental training in order to furnish better trained men for the practice of a specialty.

As a part of the endeavor to accomplish this purpose, the Advisory Board of Medical Specialties has created the Committee on Standards and Examinations. Among other matters this committee has inquired into the standards of the various specialty boards, has considered the matter of postgraduate training, and is placing before the advisory board at its meeting here in Cleveland a report on the minimum requirements for admission to the examination of a medical specialty board, as follows:

Each applicant should have certain (*a*) general qualifications, (*b*) professional education, (*c*) specialized training.

A. General qualifications:

1. Satisfactory moral and ethical standing in the profession.

2. A license to practice medicine.

3. Membership in the American Medical Association or, by courtesy, membership in such Canadian medical societies as are approved by the Council on Medical Education and Hospitals of the American Medical Association.

B. Professional Education:

1. Graduation from a medical school of the United States and Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association.

2. Completion of an internship of not less than one year in a hospital approved by the same council.

C. Specialized Training, to be effective as far as practical not later than Jan. 1, 1938:

1. A period of study after the internship of not less than three years in clinics, dispensaries, hospitals and laboratories recognized by the same council as competent to provide a satisfactory training in the special field of study.

2. This period of specialized preparation should include:

(*a*) intensive graduate training in anatomy, physiology, pathology, and the other basic medical sciences which are necessary to the proper understanding of the disorders and treatment of conditions in that particular field;

(*b*) an active experience of not less than eighteen months in hospitals, clinics, dispensaries and diagnostic laboratories recognized by the council as competent in the specialty;

(*c*) examinations in the basic medical sciences of a specialty as well as in its clinical, laboratory and public health aspects.

3. An additional period of not less than two years of practice.

In case of an applicant whose medical training has been received outside of the United States and Canada the credentials must be satisfactory to the Advisory Board.

TRENDS

The trend in modern medicine has been toward specialization, and with this trend many men have entered a specialty with inadequate fundamental training, often realizing this deficiency too late to make up for it adequately as they have become increasingly busy with their practice and hospital work. From an examination of these records there is a definite trend toward postgraduate special training in this country, either as an assistant to a well known specialist or as a resident

or fellow or in a prescribed two or three year graduate course in dermatology provided in several institutions. There is also the trend toward obtaining a postgraduate degree in dermatology. Furthermore, in the formation of the various boards there is a very definite trend toward the control or regulation of specialists. There is some feeling among authorities studying medical education that the licensing of specialists will be ultimately reached. There is no doubt of the fact that more stringent qualifications for the practice of a specialty will be required and that candidates for teaching positions and hospital staff appointments will be selected from those individuals fulfilling these higher requirements.

CONCLUSION

I have attempted to clarify any misunderstanding about the activities of the American Board of Dermatology and Syphilology. I have also reviewed the preparation for special practice which the diplomates of their board have received, indicating some of the significant changes that have occurred and the trends suggested by this study. We as physicians and as specialists in dermatology and syphilology must accept the fact that these changes are in progress at the present time and furthermore that we must participate actively in this adjustment period. We should review the situation thoroughly and lend our aid, as individuals as well as an organization, in the program to regulate or control our specialty, perhaps best through the board that has been formed for this purpose rather than at some later period undergo the restrictions imposed on us by governmental or other outside agencies.

416 Marlborough Street.

THE RELATION OF POSTGRADUATE MEDICAL INSTRUCTION TO PUBLIC HEALTH

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Public health service originated in the minds of doctors who recognized the need of the community for this important branch of medicine. Jenner and Waterhouse were practitioners of medicine as well as the founders of preventive medicine and the forerunners of modern public health service. Oliver Wendell Holmes was likewise an ardent champion of preventive medicine as well as a practitioner of the medical art. Austin Flint, the eminent physician and cardiologist, was one of the earliest epidemiologists; he conclusively established the source of an epidemic of typhoid in New York State when there was error and much confusion of thought in regard to the etiology.

The practitioner of medicine by tradition is interested in public health problems. His enthusiasm for and cooperation in public health programs has varied from time to time. By training, the physician is taught to individualize his knowledge to a great degree. However, it is known that often a single patient's disease may have a direct bearing on community health. Thus the early, accurate diagnosis and treatment of an individual's contagious disease is the best kind of preventive medicine for the community. This type of case treatment is a public health problem and is recognized as such by the public and profession in a large group of contagious diseases.

Hard and fast lines cannot be drawn between public health problems and the private practice of medicine. These two types of medical work have the common aim and purpose of maintaining the highest degree of community health. The public health physician attacks this problem primarily from the group standpoint, while the private physician is concerned chiefly with the individual patient. The public health physician has a large field of undisputed practice in guaranteeing pure food and water supplies, supervision of quarantine laws, and all similar public safeguards. These are obvious mass health problems. The improvement of community health beyond these broad realms is largely a problem of individual attack. If this is true, the situation cannot be adequately met in the most efficient manner unless the best remedial and preventive medical service is available to every person. This is possible only through the united efforts of public health physicians, private practitioners and their co-workers. No corps of public health physicians and nurses can alone hope to cope successfully with this immense, vital, human problem without the friendly, active cooperation and assistance of the whole medical profession. That this cooperation has not existed at all times is patent to any observer who reads vital statistics for various communities. There have been occasions when health departments have attempted to provide facilities for postgraduate instruction without great success. The causes of such failures are varied; they are usually due to lack of mutual understanding and full appreciation of the fact that all physicians have many common interests and problems irrespective of their fields of work. However, it is not an idle dream to hope for better results from real cooperation between these two groups of the medical profession.

New discoveries and improvements are constantly being made in all fields of medicine and related science. It is a major problem in private practice as well as in the realm of public health to provide the practicing physician and health worker with this new knowledge, which may be of the greatest importance to individual and community health. A working educational system is needed that is flexible enough to meet all practical requirements. There are two modes of direct approach to the problem of postgraduate medical instruction: one is for doctors to return to postgraduate medical centers for study; the other is to take postgraduate courses to the individual communities. For the best results both of these methods should be used in much larger measure than is done at present. There has long been much indirect teaching through medical books and journals, but this is not sufficient to meet present day needs. In addition, direct methods of personal teaching are desirable and practicable.

It is interesting to know about some successful cooperative efforts in postgraduate medical instruction which have been carried out to the mutual advantage of the public and the profession. The Detroit Department of Health has inaugurated a program of postgraduate instruction in cooperation with the Wayne County Medical Society. This instruction aims to develop interest and proficiency in the practice of preventive medicine by the practicing physician. This health department started a program of weekly clinics in 1930. The first year the largest attendance was

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forty-five, while in the last season as many as 300 physicians were in attendance at one session. The teaching material has been enlarged to include many problems related to the diagnosis, treatment and prevention of the acute communicable diseases.[1] Also the state health departments of Georgia, Massachusetts, North Carolina, Virginia and other states have cooperated with the state medical societies in giving postgraduate extension courses.

The following data on the successful cooperation of the Massachusetts State Health Department with the Massachusetts Medical Society in inaugurating a state-wide program of postgraduate medical instruction may be of interest in visualizing ways and means of active participation by public health physicians in assisting the organized profession to secure instruction in preventive and curative medicine. This experience is not of great length, but it has been successful. The Massachusetts Medical Society has just finished its first year of statewide postgraduate extension instruction which has functioned in 100 per cent of the state. Every district society has taken an interest and proved that doctors everywhere, whether they reside in city or village, have a genuine interest in improving their ability.

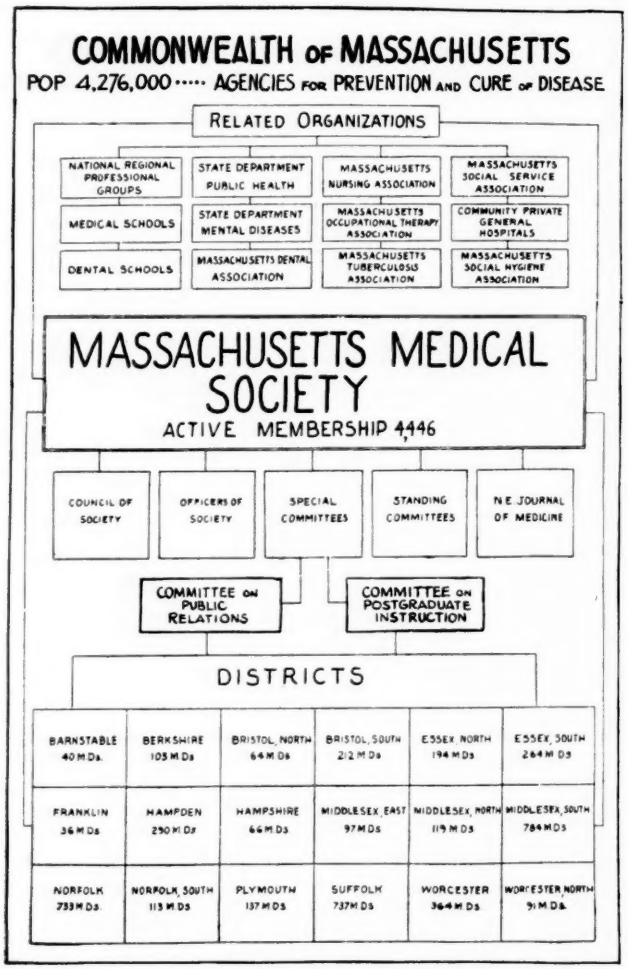

Chart 1.—Relation of the department of postgraduate instruction to the state society as a whole.

Chart 1 shows the relation of the department of postgraduate instruction to the state society as a whole. This work is carried on under a special committee. The background of more than 4,000,000 people who need and expect good medical service provides a strong incentive in motivating this work. The Massachusetts Medical Society is the central professional group which is interrelated with all the organizations named in the upper section of the chart; the component district societies are named in the lower section.

Chart 2 explains how the Massachusetts Plan of Postgraduate Medical Instruction functions. The committee on postgraduate instruction is a group of eighteen doctors. Among the members are representatives of all sections of the state society, the chairmen of the standing committees of the medical education and diplomas and public health, the editor of the *New England Journal of Medicine*, the state health commissioner, the state commissioner of mental diseases, the deans of Boston University, Tufts and Harvard medical schools, or their official representative, and the president of the Boston Medical Library. This committee formulates plans and policies; the work of organization and administration is delegated to an executive committee of three; an executive secretary is also a member of the committee. In actual operation this past year the executive committee arranged a curriculum and provided a faculty, which was drawn largely from the medical schools. However, some nonmedical school faculty instructors gave splendid service. The committee has a free hand to secure teachers from any source. When this program was started, the Harvard Medical School abandoned all its work in giving postgraduate extension courses in Massachusetts. It is the opinion of the Massachusetts Medical Society that it is the duty of the organized profession to carry on this type of graduate instruction. The committee has received active assistance from the state health department, the state department of mental diseases, many community and private general hospitals, and the medical schools. As this work develops, other related organizations will be of assistance.

The Massachusetts Medical Society program of postgraduate instruction was finished on May 15, 1934. The total benefit to the profession and the public is difficult to evaluate; however, this value may be estimated from the fact that 1,002 doctors enrolled in twenty-two courses, which were given in groups of ten subjects in twenty-four different cities. A faculty of 170 instructors gave the course of study. The cost per member was $5 for registration, and the project is essentially self supporting. The Massachusetts Medical Society plans to continue this work. The success of the Massachusetts Plan has been due to the splendid cooperation of the state health department, the medical schools and other professional groups who have worked with the state medical society.

Is it not reasonable and desirable that public health physicians should take a more active interest in programs of postgraduate medical instruction? Specialists in public health are in an advantageous position to assist practicing physicians to provide better medical service. The best medical care for the individual and community is possible only by having highly trained and efficient physicians who carry on their work enthusiastically. There has been much criticism of the present social order of medical service. Is it not a possibility that much of the difficulty is the inadequate and uneven distribution of the knowledge of how to provide the highest grade of modern medical service? The actual need of society is not essentially cheap medical service;

1. Gordon, J. E., medical director, health department of the city of Detroit: Personal communication to the author.

rather the need is for the highest grade of medical care. As in most other realms of the social order, the best is usually the cheapest in the long run. No plan of mass medical service by insurance schemes, state medicine or otherwise will rise higher than the average working intelligence of the physicians who give such service. Would it not be to the mutual benefit of the profession and society if much more effort were spent in providing facilities for adequate postgraduate medical instruction? There is a great awakening of interest among the profession in postgraduate study. The history of the profession is one of constant progress. I believe that the

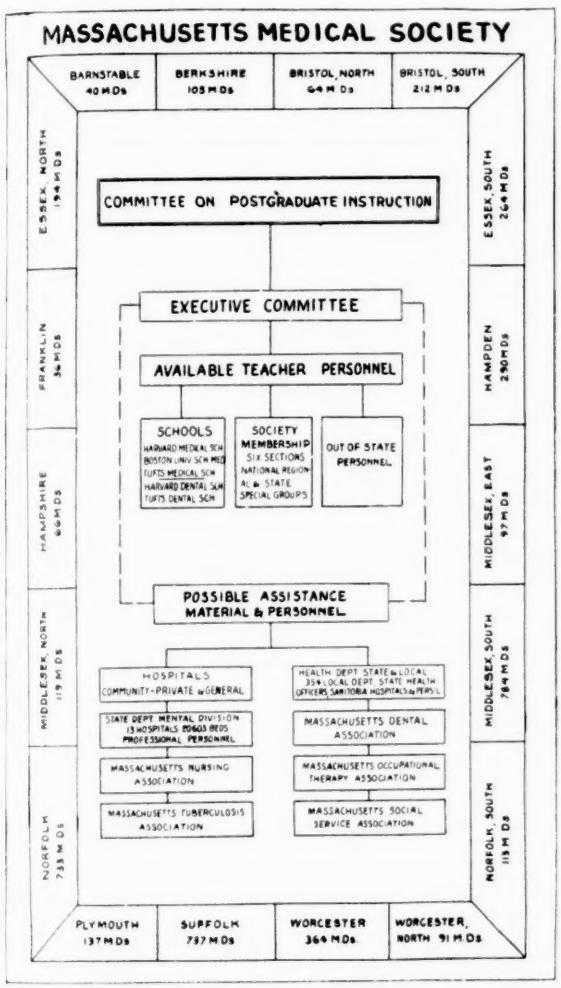
MASSACHUSETTS MEDICAL SOCIETY
BARNSTABLE 40 M Ds
BERKSHIRE 103 M Ds
BRISTOL, NORTH 64 M Ds
BRISTOL, SOUTH 212 M Ds
ESSEX, NORTH 194 M Ds
ESSEX, SOUTH 264 M Ds
COMMITTEE ON POSTGRADUATE INSTRUCTION
EXECUTIVE COMMITTEE
AVAILABLE TEACHER PERSONNEL
SCHOOLS
HARVARD MEDICAL SCH
BOSTON UNIV SCH MED
TUFTS MEDICAL SCH
HARVARD DENTAL SCH
TUFTS DENTAL SCH
SOCIETY MEMBERSHIP
SIX SECTIONS
NATIONAL REGION
A. & S. STATE
SPECIAL GROUPS
OUT OF STATE PERSONNEL
FRANKLIN 34 M Ds
HAMPDEN 290 M Ds
HAMPSHIRE 69 M Ds
MIDDLESEX, EAST 97 M Ds
POSSIBLE ASSISTANCE MATERIAL & PERSONNEL
MIDDLESEX, NORTH 119 M Ds
MIDDLESEX, SOUTH 784 M Ds
HOSPITALS COMMUNITY-PRIVATE & GENERAL
HEALTH DEPT. STATE & LOCAL 35% LOCAL DEPT. STATE HEALTH OFFICERS, SANITORIA HOSPITALS & PERS'L
STATE DEPT. MENTAL DIVISION 13 HOSPITALS 20603 BEDS PROFESSIONAL PERSONNEL
MASSACHUSETTS DENTAL ASSOCIATION
MASSACHUSETTS NURSING ASSOCIATION
MASSACHUSETTS OCCUPATIONAL THERAPY ASSOCIATION
MASSACHUSETTS TUBERCULOSIS ASSOCIATION
MASSACHUSETTS SOCIAL SERVICE ASSOCIATION
NORFOLK 733 M Ds
NORFOLK, SOUTH 113 M Ds
PLYMOUTH 137 M Ds
SUFFOLK 737 M Ds
WORCESTER 364 M Ds
WORCESTER, NORTH 91 M Ds

Chart 2.—Diagram of how the Massachusetts Plan of Postgraduate Medical Instruction functions.

present medical personnel can meet present day problems. Opportunities for continued study and inspired leadership are the profession's greatest needs.

ABSTRACT OF DISCUSSION

DR. J. E. GORDON, Detroit: In 1930 a scheme of postgraduate instruction was started in Detroit, relating particularly to problems in the control of communicable diseases. Preventive medicine profits in proportion to the increased interest and activity of the private physician. Vaughan has emphasized that successful participation of the private physician in preventive medicine depends on three factors: the prepared physician, the prepared public and a sympathetic health agency. An increased interest of the physician in the possibilities of preventive medicine, as contrasted with curative medicine, together with instruction in the technic of the methods involved, has been attempted in three ways—by postgraduate instruction, by personal contact through medical coordinators, and finally, perhaps most important, by adequate undergraduate instruction. The work to which I refer deals with the first of these activities. For a number of years an attempt was made to interest physicians in programs of preventive medicine through circulars, by distribution of printed instructions and by talks before medical societies. The conclusion was reached that a more fruitful line of attack would be actual demonstration. There is often in public health education too much of lectures and literature and not enough of actual demonstration of method. Weekly clinics were organized, to which all physicians of the city were invited. Patients were presented, there was illustration of the methods of early diagnosis, and actual demonstration was made of the technic of specific preventive measures and of tests for immunity. Attendance at these clinics progressively increased. This suggested that the method met a need and stimulated the interest of physicians.

DR. E. R. HAYHURST, Columbus, Ohio: May I ask the plan of financing? Whence comes the money?

DR. BENJAMIN GOLDBERG, Chicago: This type of instruction has been of interest to those engaged in tuberculosis work because of the difficulties encountered by the general practitioner in making a diagnosis of early tuberculosis. In Chicago in 1927 I instituted a plan of tuberculosis education based on the development of a temporary school in a community, to which medical practitioners might come without much loss of time. The local medical society branch furnished a group of physicians interested. The material for teaching was taken to an available hall or auditorium in the vicinity. Lectures were given by specialists in various fields—bacteriology, pathology, physical diagnosis, roentgen diagnosis and childhood tuberculosis. Following the didactic work, practical demonstrations and examination of patients by the practitioners' student group were given in adjacent tuberculosis dispensaries until capability was demonstrated in the recognition of pulmonary disease.

DR. LEROY E. PARKINS, Boston: In Massachusetts the state medical society appropriated $1,000 the first year to defray the beginning expense, but it was also voted to charge $5 for each member who registered for the course. Actually the $1,000 appropriated was never used. The $5 registration fee amply covered all expenses. The state society organized a faculty of 170 instructors. We really organized a postgraduate school within the medical society. The best instructors available in Massachusetts gave the courses. Some of them were private practitioners from various parts of the state. The committee was given a free hand to obtain instructors from any source. The first year it was agreed to pay no salary to instructors beyond the actual expenses. We were liberal in allowing any expenses they wanted to incur. At the present we are just finishing the first year, so that we have not made a final accounting, but I know we are going to come out with a balance to the good. Just now we are organizing the curriculum for next year. Twenty-two individual subjects were offered last year; that will be reduced this year to probably ten groups, actually thirty subjects. Each district society will be allowed to choose three groups and one elective. We are very liberal in our agreement to give any type of instruction. This has included tuberculosis, gonorrhea, syphilis, pneumonia, fractures, surgery, obstetrics and the general run of medical subjects. We are fortunate in having the state 100 per cent organized. We have an excellent chairman in each district, who has been wonderfully cooperative with the state committee in each case, so we have had splendid service from them. They are organized as a committee; last week they met in Worcester at the state convention, and told us what they wanted; now it is our job to provide what they want. This project of giving instruction to the medical profession is one of the greatest things the organized medical society can do, and I am certain that it can be financed in any state. Canada does it on a national scale; the Sun Life Insurance Company has given $30,000 a year to the Medical Association of Canada for six years to carry on extension teaching. If there is any one here from Virginia, I think he could tell you about the Commonwealth Fund, which gave the Medical Society of Virginia $10,000 to help organize the work there.

CONSERVATIVE TREATMENT OF LATE TOXEMIAS OF PREGNANCY

WITH SPECIAL REFERENCE TO THE INTRAVENOUS USE OF MAGNESIUM SULPHATE

LYLE G. McNEILE, M.D.
LOS ANGELES

F. S. Newell,[1] in addressing the alumni of the New York Lying-In Hospital, Nov. 12, 1913, said: "Any one reading the two papers on eclampsia which were presented at the last meeting of the New York State Medical Society, one on the surgical and one on the medical treatment of eclampsia, unless he has strong views of his own, would be in serious doubt as to how to treat a case of toxemia, because he is told on the one hand that the only real hope of the eclamptic patient lies in the immediate emptying of the uterus, . . . and on the other hand he is assured that the only safe method of treating eclampsia is by purely medical means." Twenty years later, the routine surgical treatment of eclampsia cannot be seriously considered by one who has even superficially examined the contributions of Stroganoff [2] and others. The definitely lowered maternal and infant morbidity and mortality in clinics employing conservative methods is well established.

The treatment of a disease of unknown etiology must of necessity be empirical, and this is particularly true of eclampsia. Theories and opinions advanced by investigators of unquestionable honesty and technical ability have been at such variance that the average practitioner is often confused in regard to the specific details of any one of the standardized procedures and the results which may reasonably be expected from such procedures.

My purpose in this presentation is to supplement a report [3] on the intravenous use of magnesium sulphate in the care and treatment of preeclampsia and eclampsia, read by my former associate, Dr. John Vruwink, before this section at the Dallas session in April 1926. In that paper we reported the results of treatment in forty-five severely preeclamptic patients and 103 eclamptic patients, using the technic developed by myself and associates at the Los Angeles County General Hospital. The mortality among the eclamptic patients was 14.8 per cent, and only six of the forty-five patients with preeclampsia developed convulsions.

Several distinct clinical entities are included in the term "late toxemia of pregnancy." While fully appreciating the value of classifying the late toxemias as eclampsia, preeclampsia, chronic nephritis complicating pregnancy and low reserve kidney, as suggested by Stander and Peckham,[4] I agree with Plass [5] that it is impossible to differentiate clinically between the last three types, and I include in this study all late toxemias of pregnancy which have resulted in convulsions, or in which at least a portion of the treatment has been directed toward the prevention of convulsions.[6]

The conditions indicating the necessity for treatment in this clinic may be summarized as a sustained rise in the systolic blood pressure to 135 mm. of mercury or over, albuminuria, edema, headache, visual disturbances and epigastric pain.

In general, the active treatment of the late toxemias of pregnancy has included the following principles:[7]

1. The reduction of the products of protein metabolism, in order to spare the kidneys.
2. The rapid elimination of the toxic elements circulating in the blood, in order to reduce the damage to the brain, heart and liver.
3. The administration of carbohydrates to replenish depleted stores of glycogen in the liver.
4. The protection of the patient from injury during unconscious periods.
5. The support of the cardiac and respiratory centers until the peak of the intoxication is passed.
6. The emptying of the uterus if the patient's condition does not improve under active treatment.

WHAT IS MEANT BY CONSERVATIVE TREATMENT

Considerable difference of opinion exists as to the limitations of conservative treatment. When the pendulum swung from the surgical treatment of eclampsia to the medical treatment, there were many who condemned operative delivery under any conditions. Stroganoff reserves operative delivery for patients in whom intervention becomes absolutely necessary for the sake of the child. Plass, in a classic review of the subject, writes: "At present, there can be no question but that the regular treatment for eclampsia should be conservative, with radical surgical procedures reserved for the unusual cases with complications which themselves afford indications for operative delivery." This statement expresses my general policy. I believe, however, that in view of the known latent effects on the mother and the high infant mortality, unless the toxemia shows definite response to ameliorative measures, systematically used over a reasonable period of time, a complication exists which may justify the termination of pregnancy. Peckham [8] in a review of the fetal mortality in the toxemias of pregnancy expresses my view in this regard. He says: "It is generally agreed that chonic nephritis is definitely aggravated by pregnancy, the severity of the condition after pregnancy is much advanced, and the amount of renal damage is in ratio to duration to which pregnancy is allowed to continue. A considerable number of women suffering from a non-nephritic variety of toxemia will be found to have a definite chronic nephritis some months after

TABLE 1.—*Results of Treatment of Eclamptic Patients During the Radical Period 1919-1924*

Types of Delivery	Number of Cases	Died	Mortality Percentage
Cesarean section	15	7	47
Accouchement forcé	9	4	44
Spontaneous, with forceps or version	41	12	29
Not delivered (moribund)	8	6	75
Postpartal eclampsia	18	4	22
Totals	91	33	36

From the Department of Obstetrics and Gynecology, University of Southern California School of Medicine.

Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 14, 1934.

1. Newell, F. S.: Bull. Lying-In Hosp. New York **9:** (Jan.) 1914.
2. Stroganoff, B.: Am. J. Obst. & Gynec. **11:** 756 (June) 1926.
3. McNeile, L. G., and Vruwink, John: Magnesium Sulphate Intravenously in Care and Treatment of Preeclampsia and Eclampsia, J. A. M. A. **87:** 236 (July 24) 1926.
4. Stander, H. J., and Peckham, C. H.: Am. J. Obst. & Gynec. **11:** 583 (May) 1926.
5. Plass, E. D., quoted by Berman, S.: Am. J. Obst. & Gynec. **16:** 410 (Sept.) 1928.
6. Lazard, E. M.; Irwin, J. C., and Vruwink, John: Am. J. Obst. & Gynec. **12:** 104 (July) 1926.
7. (*a*) Falls, F. H.: California & West. Med. **31:** 2 (Aug.) 1929. (*b*) Titus, P.; Dodds, P., and Willetts, E. W.: Am. J. Obst. & Gynec. **15:** 303 (March) 1928.
8. Peckham, C. H.: Fetal Mortality in Toxemias of Pregnancy, J. A. M. A. **101:** 1608, (Nov. 18) 1933.

delivery. A high fetal mortality rate exists with all types of toxemia of pregnancy. In the cases with the severer toxemic manifestations the outlook for the child is so poor that it should have little effect upon the treatment."

While the treatment given in this clinic is generally spoken of as the magnesium sulphate treatment for eclampsia, I have never regarded the intravenous injection of magnesium sulphate as more than a very valuable

TABLE 2.—*Results of Treatment of Eclamptic Patients with Magnesium Sulphate from 1924 to 1934*

	Number of Cases	Gross Mortality	Corrected Mortality
From May 1924 to February 1926.....	54	16.66%	11.5%
From February 1926 to July 1929.....	71	7.0%	5.7%
From July 1929 to November 1932.....	100	16.0%	10.5%
From November 1932 to April 1934....	34	11.76%	11.76%
Totals.....	259	12.85%	9.86%

adjunct in the commonly accepted conservative treatment of toxemia. As Lazard [9] states, "it is essentially a sedative, dehydration therapy" which clinically will cause considerable reduction of blood pressure, reduce edema, increase urinary output, and reduce or control convulsions and certain other symptoms. In my opinion there is a strong possibility that additional study of the pharmacology of magnesia may demonstrate properties which will fully explain the clinical effects which we have observed.

The Stroganoff treatment, sedation with morphine and chloral, with noninterference with pregnancy, is the basis of conservative treatment today. The use of chloroform, as advocated by Stroganoff, cannot be justified in view of the present knowledge that it produces central necrosis of the liver lobules. The rationale of such treatment is difficult to understand, but, as Stander states, "It has recently been shown that morphia raises the CO_2 combining power of the blood, and this property, together with its sedative action, may explain the good results following its use in eclampsia." Stander makes another pertinent observation relative to the mortality reported by Stroganoff, in concluding that "Stroganoff deals with mild and unneglected cases, while in most obstetrical clinics in this country the patient is usually admitted when in a desperate condition."

Titus, Dodds and Willetts,[10] in addition to the usual rational procedures, advise the injection of a strongly

TABLE 3.—*Methods of Delivery in Thirty-Four Cases of Eclampsia from November 1932 to April 1934*

	Cases
Spontaneous delivery.....	25
Low forceps.....	5
Low cervical section.....	2
Vaginal hysterotomy.....	2

hypertonic dextrose solution, which they state has a striking effect in controlling both the severity and the number of the convulsions as well as in lowering the blood pressure and stimulating diuresis. The basis of their recommendation lies in the contention that the principal change in toxemia of pregnancy is one of carbohydrate metabolism based primarily on a deficiency of carbohydrate intake plus increased consumption of carbohydrate, resulting in a depletion of the glycogen stores with damage to the liver and its function. Stander and others have taken issue with Titus. An analysis of the blood sugar determinations in our cases has definitely confirmed the conclusion of Titus that in true toxemia there is a relative hypoglycemia, and I am utilizing his suggestion regarding the use of carbohydrates in all types of toxemias of pregnancy.

OBSERVATIONS ON THE PHARMACOLOGY OF MAGNESIUM SULPHATE, IN RELATION TO ITS USE IN THE LATE TOXEMIAS OF PREGNANCY

In 1905 Meltzer [11] demonstrated the rôle of magnesium sulphate in controlling the convulsions of tetanus and established its anesthetic properties. Later he amplified his original contribution.[12] Numerous investigators [13] have confirmed this, and it now seems definitely established that magnesium sulphate possesses the property of controlling convulsions in tetanus, eclampsia and certain other conditions, and that the drug possesses marked anesthetic properties.

It is well established that the intravenous injection of hypertonic solutions of magnesium sulphate will reduce both the cerebrospinal fluid pressure and the brain bulk. Postmortem studies have shown that edema of the brain, causing increase in the bulk of the brain, is an almost constant phenomenon in eclampsia, and many observers believe that increased cerebral pressure may be a cause of the convulsions.

TABLE 4.—*Mortality in Preeclamptic Patients Treated with Magnesium Sulphate from 1924 to 1934*

	Number of Cases	Number of Deaths	Mortality
To July 1929.....	143	4	2.80%
July 1929 to November 1932.....	228	2	0.80%
November 1932 to April 1934.....	169	3	1.76%
Total.....	540	9	1.66%

Experimental evidence shows that the injection of magnesium salts either subcutaneously or intravenously is followed by a rise in blood sugar.[14]

Beginning with Meltzer's contribution in 1905,[11] investigators have rather consistently warned of the toxic effect of intravenous administration of magnesium sulphate, because of the danger of causing respiratory failure. Stander at first [15] considered the intravenous use of magnesium sulphate unsafe and unwarranted but later [16] considered that a total of 6 Gm. of magnesium sulphate administered intravenously in 20 cc. doses of a 10 per cent solution over a period of twenty-four hours up to a maximum of 6 Gm. of magnesium is within the limit of safety. His principal objection was the production, in experimental animals, of definite histologic changes in the liver and kidneys, in the form of moderate necrosis and degeneration. Hirschfelder [17] calls attention to the fact that a condition of coma, easily mistaken for uremic coma, can be induced in nephritic patients by purgation with magnesium sulphate

9. Lazard, E. M.: Am. J. Obst. & Gynec. **26:** 647 (Nov.) 1933.
10. Titus, P.; Dodds, P., and Willetts, E. W.: Am. J. Obst. & Gynec. **14:** 89 (Jan.) 1927; footnote 7 *b*.
11. Meltzer, S. J.: M. Rec. **68:** 965, 1905.
12. Meltzer, S. J.: Inhibitory Properties of Magnesium Sulphate and Their Therapeutic Application in Tetanus, J. A. M. A. **66:** 931 (March 25) 1916.
13. Meltzer, S. J. and Auer, J.: J. Exper. Med. **23:** 563, 1916. Blake, J. A.: Surg., Gynec. & Obst. **2:** 541, 1906.
14. Horvath, A. A.: Proc. Soc. Exper. Biol. & Med. **24:** 198 (Dec.) 1926.
15. Stander, H. J.: Am. J. Obst. & Gynec. **12:** 654 (Nov.) 1926.
16. Stander, H. J.: Effect of Intravenous Administration of Magnesium Sulphate, J. A. M. A. **92:** 631 (Feb. 23) 1929.
17. Hirschfelder, A. D.: Clinical Manifestations of High and Low Plasma Magnesium, J. A. M. A. **102:** 1138 (April 7) 1934.

but states that his results in no way conflict with those of investigators who have administered magnesium sulphate intravenously for eclamptic convulsions, since they gave in carefully controlled doses only sufficient magnesium sulphate to produce subsidence of convulsions.

I have used magnesium sulphate intravenously in eclampsia for eighteen years, during ten years of which it has been in routine use at the Los Angeles County General Hospital. During the early experimental period,

TABLE 5.—*Preeclampsia Patients Developing Convulsions While Under Treatment with Magnesium Sulphate*

	To July 1929	From July 1929 to November 1932	From November 1932 to April 1934	Total
Cases admitted in labor, and given magnesium sulphate as a prophylactic	55	78	77	210
Convulsions	5	1	8	14
Cases admitted during the last 2 weeks of pregnancy and in which magnesium sulphate was the main feature of treatment	88	150	92	330
Convulsions	6	9	6	21

I was in constant fear of the respiratory failure which so many investigators had stressed. An intern, impressed only with a knowledge that doses of 20 cc. of 10 per cent magnesium sulphate were used in the treatment of eclampsia, administered six doses, or 12 Gm., of magnesium sulphate within ten hours to an eclamptic patient who was in a desperate condition. She made an uneventful recovery. The incident had a direct bearing on the increase in the dosage used in the clinic. During this period we have not observed any respiratory depression or any clinical evidence which would indicate that the drug has been injurious either directly or indirectly.

Magnesium sulphate has been administered intraspinally,[18] intramuscularly [19] and intravenously. Since Dorsett's results with intramuscular injections and the results of many observers with intravenous injections have been so satisfactory, there does not seem to be any justification for the intraspinal method. Our experience in a not inconsiderable number of patients

TABLE 6.—*Method of Delivery in 196 Preeclamptic Patients Treated from November 1932 to April 1934*

	Cases
Spontaneous delivery	90
Forceps delivery	26
Version and extraction	5
Breech extraction	7
Cesarean section	16
Vaginal hysterotomy	1
Not stated	1
Undelivered	9
Tabulated as eclamptic	14

treated by the intramuscular administration would indicate that painful induration and sloughs follow that method with sufficient frequency to make the intravenous route the method of choice.

SCOPE OF THE PRESENT REPORT

This report includes 540 preeclamptic patients, of whom thirty-five developed convulsions (6.41 per cent), and 259 patients with convulsive toxemias, a total of 799 cases. The report is a compilation of the reports of Lazard,[9] McNeile and Vruwink [3] and Lazard, Irwin and Vruwink,[20] as well as a summary of the results obtained from November 1932 to April 16, 1934. With the exception of a limited number of cases which were either under the immediate care of a member of the obstetric staff or were seen in consultation, the cases are from my service and that of Dr. E. M. Lazard at the Los Angeles County General Hospital. The obstetric department of this hospital cares for more than 500 cases each month, of which 350 deliveries are conducted in the hospital and 150 deliveries are conducted by the outdoor service. The relative number of patients who receive adequate prenatal care is small. A large proportion of the patients treated for toxemias have had no prenatal care and are often admitted in a desperate condition. A large proportion of the convulsive conditions would be classed as "severe types" according to the classification proposed by the British Congress of Obstetrics and Gynecology in 1922, which classified as severe any case of eclampsia presenting two or more of the following signs: (1) coma, (2) pulse rate over 120, (3) temperature above 103, (4) a number of convulsions greater than ten, (5) a urine that becomes solid on boiling, (6) absence of edema, (7) a blood pressure over 200.

PROPHYLAXIS OF LATE TOXEMIAS OF PREGNANCY

A discussion of the treatment of late toxemias of pregnancy would be incomplete without mention of the

TABLE 7.—*Indications for Cesarean Sections on Preeclamptic Patients*

	Cases
Previous cesarean section	3
Abruptio placentae	3
Deformed pelvis	1
Primipara, aged 41 years	1
Toxemia of pregnancy	8

effect of prophylaxis; i. e., prenatal care. The Los Angeles Maternity Service, the outpatient division of the Los Angeles County General Hospital, caring for prenatal care and home deliveries, rarely sees a case of eclampsia in patients who have registered early in pregnancy. In addition to the usual medical supervision given generally in obstetric dispensaries, we insist on limitation of the patient's weight during pregnancy and on dental examination of all patients to discover and treat oral foci of infection. The results during the three years of dental service have had such a pronounced effect in reducing our incidence of toxemias that I feel that the necessity for stressing this phase of prenatal care is amply justified.

ROUTINE ACTIVE TREATMENT OF PREECLAMPTIC PATIENTS

1. Absolute rest in bed is necessary. Hospitalization is very desirable, but patients with mild toxemias can be cared for in the home if hospitalization is not feasible.

2. A milk diet is used. In conformity with opinions expressed by many authors regarding nephritic, basic and other diets in cases of toxemia, several types of diet have been tried from time to time. I am definitely of the opinion that from the clinical standpoint an intake composed exclusively of milk and water is advantageous.

18. Alton, Botto: J. Exper. Med. **25**: 83 (Jan.) 1917.
19. Dorsett, L.: Am. J. Obst. & Gynec. **11**: 227 (Feb.) 1926; J. Missouri M. A. **27**: 316 (July) 1930.
20. Lazard, E. M.; Irwin, J. C., and Vruwink, John: Am. J. Obst. & Gynec. **12**: 104 (July) 1926. Irwin, J. C., ibid. **34**: 208 (Feb.) 1926.

3. The fluid balance must be maintained by accurately measuring the fluid intake and output. If necessary, a retention catheter is used to insure the accurate measurement of urine excreted. Fluid bowel movements should be measured.

4. The bowels are to be kept active, 1 ounce of magnesium sulphate being given every six hours until the bowel movements are watery, then one-half ounce daily. The recent observation of Hirschfelder [17] that in patients with renal insufficiency the oral administration of magnesium sulphate may produce coma, but that sodium sulphate may be substituted safely in such cases, may be the basis for changing this part of our treatment.

5. A urinalysis of a twenty-four hour specimen is made daily. A quantitative estimation of the albumin is done with a routine chemical and microscopic examination.

6. The blood pressure is taken three times a day, or oftener if indicated by a rising blood pressure or other evidences of an increasing toxemia.

7. Twenty cc. of a 10 per cent solution of magnesium sulphate is administered intravenously when the systolic blood pressure is 150 or higher and is repeated when indicated by a rising blood pressure or other evidences of increasing toxemia. From 60 to 120 cc. can be safely given in twenty-four hours.

8. Dextrose, 300 cc. of a 25 per cent solution, must be given intravenously from one to four times daily and is particularly important in patients showing decreased urinary output with or without a low carbon dioxide combining power of the blood.

9. Patients who are very restless should be given chloral hydrate, 20 Gm., and sodium bromide, 60 Gm., by rectum.

10. If the symptoms improve, we add a basic diet, and place the patient on a very restricted regimen. If the symptoms do not improve, or become more severe, after a reasonable period, which, in this clinic usually varies from four to seven days, but in not exceptional cases may be continued much longer, we ordinarily induce labor by artificial rupture of the membranes, or with a Voorhees bag.

Cesarean section is rigidly reserved for cases in which it is definitely indicated for some obstetric condition other than toxemia of pregnancy, and for patients with fulminating toxemia.

MANAGEMENT OF THE PATIENT WITH CONVULSIONS

1. Twenty cc. of a 10 per cent solution of magnesium sulphate is administered intravenously as soon as possible after the first convulsion. This dosage is repeated every hour until the convulsions are under control. The subsequent dosage is based on recurrence of convulsions, elevation of blood pressure and other signs.

2. The patient is placed in a private room. An attendant is with the patient constantly.

3. Inhalations of pure oxygen are administered to the patient after each convulsion and are continued until the respiration is normal.

4. If the patient is in labor, nitrous oxide or ethylene analgesia is given during contractions if the restlessness cannot be adequately controlled by rectal administration of chloral sodium bromide.

5. Self injury is prevented, if necessary, by using very gentle restraint during the convulsions.

6. Absolute quite in a dark room is maintained and examinations are made only when absolutely necessary.

7. The general orders applying to the routine treatment of preeclamptic patients are continued so far as possible. The administration of dextrose is of great importance, as is also the rectal administration of chloral sodium bromide to patients who are restless.

8. If the patient is in the second stage of labor and progress is not being made, she is delivered with forceps or by other indicated procedures.

9. Cesarean section is done only for a bona fide obstetric indication or for a fulminating toxemia, and then only with the consent of the senior attending obstetrician.

TREATMENT AND RESULTS DURING THE FIVE YEARS (1919 TO 1934) PRECEDING THE USE OF THE MAGNESIUM SULPHATE TECHNIC IN THE TREATMENT OF LATE TOXEMIAS [21]

During the period of five years from 1919 to 1924, our treatment of toxemias of pregnancy consisted of the usual measures in common use at the time, such as elimination, epsom salt by mouth, hot packs, bloodletting and veratrum viride. We greatly relied, however, on the prompt delivery of the patient, particularly in the convulsive type of case. During this period of radical treatment of late toxemias, thirty-four preeclamptic and ninety-one eclamptic patients were treated.

TABLE 8.—*Number of Intravenous Injections of Magnesium Sulphate Administered in Recent Series of Eclamptic and Preeclamptic Patients*

	Eclamptic Patients	Preeclamptic Patients
From 1 to 5 doses	8	88
From 6 to 10 doses	12	22
From 11 to 15 doses	4	14
From 16 to 20 doses	8	11
From 21 to 25 doses	1	4
From 26 to 50 doses	..	7
Over 50 doses	..	2

From 1924 to 1934 a total of 799 patients with late toxemias were treated with magnesium sulphate. Of this group 540 had preeclampsia and 259 had eclampsia.

The four deaths occurring in the more recent group were apparently due to eclampsia. All cases were of the severe type. A brief abstract of two cases, no less severe than the others, will serve as an example of the type of eclampsia which contributes to our mortality:

CASE 1.—A secundigravida, aged 23, seven and one-half months pregnant, admitted Feb. 22, 1934, had had no prenatal care. Convulsions had occurred three and one-half hours before admission and were controlled with chloroform by another physician. The blood pressure on admission was 160 systolic and 106 diastolic. The maximum blood pressure was 192 systolic and 134 diastolic. She was semicomatose and the convulsions were well controlled with magnesium sulphate. Labor was induced Feb. 23, 1934, with a Voorhees bag. The spontaneous delivery of a stillborn, premature infant occurred seventeen hours later. The patient died twenty-four hours after delivery.

CASE 2.—A primigravida, aged 33, eight months pregnant, admitted May 13, 1933, had had edema of the feet for three weeks and severe headaches for two days. She had had no prenatal care. The first convulsion occurred ten and one-half hours before admission and was followed by alternating periods of coma and convulsions. The maximum blood pressure was 200 systolic and 110 diastolic. Induction of labor by artificial rupture of the membranes was done on May 15, 1933. The patient was delivered May 18. A spinal tap, May 19, showed a spinal fluid pressure of 400 mm. The patient had been comatose for the past six days. Death occurred May 24. The

21. Irwin, J. C.: J. Exper. Med. **25**: 83 (Jan.) 1917.

autopsy showed liver changes characteristic of eclampsia and very marked multiple cerebral hemorrhages.

The methods of delivery in the thirty-four cases occurring in the more recent group are of interest. Both low cervical sections were done on primiparas with fulminating toxemia of severe type. Both patients made uneventful recoveries.

We are convinced that many reports, criticizing the use of magnesium sulphate in eclampsia because of ineffectiveness, have arisen because an adequate dosage was not used. During the first five years of its use we constantly varied the dosage. It is our opinion that, in general, the dosage recommended in this paper is clinically safe and effective and that the use of smaller doses is not likely to give satisfactory results.

The continued use of the drug over long periods of time in preeclamptic patients who do not show definite improvement is not to be recommended.

INFANT MORTALITY IN ECLAMPTIC PATIENTS

In the recent series of thirty-four patients with eclampsia there occurred one pair of twins. Of the thirty-five babies, twenty-two were discharged in good condition. Two of the patients were delivered at home, and the babies were not admitted. Prematurity was the cause of four stillbirths and five deaths. Toxemia was the cause of two stillbirths. The infant mortality was 31.42 per cent.

COMMENT

It is obvious that the entire credit for our reduction in maternal mortality which resulted from late toxemias of pregnancy cannot be attributed to the use of intravenous magnesium sulphate. The effect of eliminating radical surgery, except when clearly indicated, has been thoroughly demonstrated. Regardless of the controversy as to the exact interpretation of clinical and laboratory data, the use of carbohydrates in the treatment of toxemias of pregnancy has been the basis for the successful treatment of many severely sick patients. The favorable effect of maintaining a proper water balance in toxic patients is generally recognized. It is not my intention to give the impression that I regard the intravenous use of magnesium sulphate as any more than an extremely valuable adjunct to the commonly accepted conservative treatment. During the eighteen years in which I have used magnesium sulphate intravenously, in the latter ten years of which it has been a major part of the treatment of late toxemias at the Los Angeles County General Hospital, I have clinically demonstrated the safety of the procedure, and its effectiveness in allaying restlessness, controlling the convulsions of eclampsia and increasing the urinary output. In a very large portion of patients there is an immediate and surprising improvement in the general toxic symptoms.

CONCLUSIONS

1. In 799 cases of late toxemias of pregnancy, 259 were of the eclamptic type.

2. There was a definite decrease in the mortality in eclamptic patients treated by conservative methods at the Los Angeles County General Hospital.

3. The intravenous injection of a 10 per cent solution of magnesium sulphate has proved a very valuable adjunct in our treatment of the late toxemias of pregnancy. It will cause some reduction of blood pressure, reduce edema, increase urinary output and reduce or control other symptoms.

4. The intravenous injection of a 10 per cent solution of magnesium sulphate will control the convulsions of eclampsia in nearly every case, and exercises a favorable influence on the other symptoms of eclampsia.

5. The intravenous injection of a 10 per cent solution of magnesium sulphate is clinically proved to be a safe procedure.

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ABSTRACT OF DISCUSSION

DR. PAUL TITUS, Pittsburgh: It is apparent from Dr. McNeile's paper that he favors, as most of us do, the "conservative" treatment of eclampsia. This is not necessarily always medical, as an operative procedure, such as forceps delivery during the second stage, may be actually conservative. Dr. McNeile's point that preeclampsia and eclampsia are essentially the same disease should be emphasized. They differ only in the addition of one spectacular symptom, the convulsion, and treatment to be most successful should be begun in the preeclamptic stage. One might question the advisability of stressing a single therapeutic step in the treatment of eclampsia by speaking of it as the "magnesium sulphate treatment," because one might deduce that this constitutes the entire treatment. Dr. McNeile was careful to emphasize the other important procedures, so that this comment is no criticism of his paper. Treatment of preeclampsia and eclampsia is properly divided into three main heads. First is its sedative treatment; magnesium sulphate injections are important here but when not available the older use of morphine is still effective. Second is the supportive treatment, of which intravenous injections of hypertonic dextrose solution are an important part. The third, briefly, is the appropriate management of the pregnancy and labor, as it occurs after the first two general procedures have become effective and the patient's condition improved. It is at these times that proper obstetric intervention is no longer to be considered as being radical. The work of the California group in stressing the fundamental importance of sedation has been of great importance in reducing the mortality rate of eclampsia.

DR. ALBERT HOLMAN, Portland, Ore.: I wish to discuss the neonatal mortality associated with the toxemias of pregnancy. The autopsy reports on babies born alive of toxemic mothers and dying in the first forty-eight hours were unsatisfactory, the pathologists most often being unable to determine the cause of death. Following the publication of that monumental work by Dr. Titus and his associates on the relative hypoglycemia associated with eclampsia, I felt that possibly the cause of neonatal deaths in babies of toxemic mothers was hypoglycemia. My associate Dr. Albert Mathieu and I determined the normal range of blood sugars in the new-born and the relationship between the blood sugar of the normal newborn and that of the mother at birth. We found that the babies' blood sugar fell into the normal adult range and that there was a very close relationship between the blood sugar of a baby and that of its mother. We felt that the babies of toxemic mothers with hypoglycemia must of necessity be born with a hypoglycemia, which increased after birth because of the metabolic drain and frequently descended to a point incompatible with life. We decided that the baby should be protected at birth by prophylactic injection of concentrated dextrose into the umbilical vein. After we had treated several babies in this way we had occasion to examine the blood of an eclamptic mother and her baby taken at birth. The woman had received 300 cc. of 25 per cent dextrose solution fifteen minutes before the birth of the child and at birth the blood of the mother and of the baby contained approximately 300 mg. of dextrose per hundred cubic centimeters of blood. This demonstrated that dextrose given intravenously to the mother rapidly passes through the placenta into the fetal circulation. We now feel that, irrespective of the amount of carbohydrate administered to the toxemic mother during the course of her disease, the baby should be protected by the administration of 300 cc. of 25 per cent dextrose solution to the mother shortly before delivery. The baby should receive sufficient carbohydrate by mouth after birth to protect it against hypoglycemia. We feel that in this manner the high neonatal mortality associated with eclampsia probably may be decreased.

PROGNOSIS IN ARTERIOSCLEROTIC HEART DISEASE

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No part of medical practice is more difficult than accurate prognosis. Yet to the patient the outlook for length of life and degree of disability is of greater interest than the technicalities of diagnosis or the details of treatment. Heart disease of any kind offers special difficulties in prognosis, and among the different etiologic types of heart disease the problem is greatest among the arteriosclerotic. Not infrequently the physician is called urgently to the bedside of a patient dying suddenly of coronary occlusion and is told by the widow that only a week or a month before a physician had examined the patient and had found no heart trouble or had said that there was "nothing serious." It is still more embarrassing beside the death bed if the same physician has given the optimistic prognosis a week or a month previously.

Since prognosis is merely quantitative diagnosis, rational treatment depends on the ability to estimate the stage of cardiosclerotic process. Referring to this fact, Mackenzie said "The recognition of the true state of matters enables us to map out a plan of life for the individual." For this reason he studied a series of cases of angina pectoris to determine the possible relationship between symptoms and physical signs and length of life. While he noted that pulsus alternans, nocturnal dyspnea and Cheyne-Stokes respiration were serious signs, he concluded that the chief one was the ease with which attacks are provoked. Confronted with the all too frequent unexpected deaths, other writers have been frankly skeptical of the possibility of an accurate prognosis. Thus Brooks [1] states that the "prognosis is exceedingly uncertain and there are no rules or signs which permit the clinician to prognose with anything like accuracy." Sutton and Lueth [2] consider the prognosis of coronary occlusion "most uncertain"; they predicate the future of the patient with angina pectoris on the likelihood of coronary occlusion, cardiac rupture and ventricular fibrillation and state that not one of these conditions can be definitely foretold. Vacquez [3] stresses the significance of intermittence or progression of the symptoms and of concomitant lesions of the liver, kidneys and arteries in the prognosis of fibrous myocarditis. Lewis [4] describes the usual sequence of symptoms in coronary occlusion and angina pectoris and stresses the difference in the outlook for angina of effort and angina decubitus. Eggleston [5] found the nature and severity of the symptoms unsafe guides in comparison with the heart's response to effort. White [6] studied the records of 200 patients with angina pectoris and compared the number showing certain signs or symptoms in the entire group with fifty of the group who died within five years and with fifty of the group who were still living at the end of five years. He concluded that hypertension, coronary thrombosis, syphilis, evident arteriosclerosis, poor heart sounds, abnormal T waves in the electrocardiogram and especially cardiac enlargement were more often found in those patents with angina pectoris who died than in those who survived. He noted that as a rule the more severe the pain, the worse the prognosis and the greater the number of the unfavorable factors appearing in a given case, the worse the outlook for the patient. He found that the prognosis was fairly good if the examination, electrocardiogram and roentgen study were all negative; early death was possible in such cases but unlikely.

Most reports considering the prognosis of a series of cases of angina pectoris include not only those in which this symptom is due to coronary arteriosclerosis but also those in which it is due to rheumatic aortic disease and syphilitic aortitis; likewise cases of coronary occlusion due to syphilis are grouped together with those due to coronary arteriosclerosis. Since it is reasonable to suppose that the etiologic factor might modify the prognosis, the present paper includes for discussion only those cases in which coronary arteriosclerosis was considered the cause of angina or coronary occlusion. Also, many cases of arteriosclerotic heart disease are included in which no history of attacks of angina pectoris or coronary occlusion could be obtained, and certain cases with a history of angina in which the predominant feature was congestive failure. No doubt in many cases the myocardial failure depended on unrecognized coronary occlusion in the past but the exclusion of such instances would give an incomplete picture of arteriosclerotic heart disease. While the series included some cases presenting hypertension, cases in which the hypertensive heart disease clearly antedated the cardiosclerosis or dominated the picture were excluded. The attempt is made to present the prognosis of cases corresponding to the pathologic sequence of coronary sclerosis (with or without occlusion) and myocardial fibrosis. From some 400 cases diagnosed arteriosclerotic heart disease, 153 meeting the

TABLE 1.—*Observations in 153 Cases of Arteriosclerotic Heart Disease*

	Number	Per Cent
Sex: Males	117	76
Females	36	24
Age at first examination:		**Years**
Average		67.5
Range		46 to 89
Residence:		**Number**
Salt Lake City		88
Utah (outside of Salt Lake City)		52
Outside of Utah		13
Occupation:		
Business		31
Professional		21
Public officials		6
Clerical		3
Housewives		27
Farming		19
Skilled labor		12
Unskilled labor		6
None or not stated		28
Outcome:	**Number**	**Group**
Dead, death with anginal syndrome	28	A
Dead, congestive failure	33	B
Dead from noncardiac causes	15	C
Total dead	76	
Alive	77	D

Read before the Section on Practice of Medicine at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 15, 1934.

1. Brooks, Harlow: Angina Pectoris, New York, Harper and Brothers, 1929.
2. Sutton, D. C., and Lueth, Harold: Diseases of the Coronary Arteries, St. Louis, C. V. Mosby Company, 1932.
3. Vacquez, Henri: Diseases of the Heart, American edition, Philadelphia, W. B. Saunders Company, 1924.
4. Lewis, Thomas: Diseases of the Heart, New York, Macmillan Company, 1933.
5. Eggleston, Cary, in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1931.
6. White, P. D.: Prognosis of Angina Pectoris and of Coronary Thrombosis, J. A. M. A. **87:** 1525 (Nov. 6) 1926.

requirements named and on which adequate follow-up data were obtainable were studied in an effort to evaluate the prognostic significance of certain symptoms and signs. I examined all the patients at least once; many were followed for as long as ten years.

The great majority of the patients were seen in private practice. The records in my charity hospital service were often inadequate or the follow-up data were too unsatisfactory to justify their inclusion. Of the 153 patients, seventy-six are dead and seventy-seven are living, permitting comparison and reexamination of the living patients to help clear up questionable points.

Certain patients are included who were first seen a short time before death or were seen only in the home, so that electrocardiographic and roentgen studies were not obtainable; such patients form a considerable part of the prognostic problem presented to the physician. The diagnostic criteria were those of the American Heart Association.[7]

The general composition of the series is shown in table 1. The series appeared reasonably representative of urban and rural populations; the sex and age distribution was the usual one. The high percentage in occupation of business and professions naturally resulted from the predominance of private practice cases.

TABLE 2.—*First Symptom and Cause or Type of Death*

		Cause or Type of Death			
				Group C (15)	
First Symptom	Total	Group A (28) Anginal Syndrome	Group B (33) Congestive Failure	Cerebral Hemorrhage	Other Causes
Angina	20	16 (80%)	2 (10%)	0	2 (10%)
Dyspnea	27	4 (15%)	20 (74%)	2 (7%)	1 (4%)
Dyspnea and angina	7	4 (57%)	1 (14%)	2 (28%)	0
Dizziness, syncope, and so on	8	3 (37%)	0	4 (50%)	1 (12%)
Other symptoms	14	1 (6%)	10 (73%)	0	3 (20%)

A study of the symptomatology of those patients who had died of heart disease showed that there had been a surprising tendency for the clinical picture to follow either the anginal syndrome or the syndrome of congestive failure. Though a few cases beginning with angina pectoris changed to the picture of chronic congestive failure and cessation of angina, usually congestive failure was a terminal event. Likewise a high percentage of those cases beginning with congestive failure presented this syndrome to death without apparent angina or coronary occlusion. In a high percentage of cases the first symptom pointed to the type of death (table 2). One half of the patients in whom dizziness, syncope or numbness of the extremities was the first symptom died not of heart disease but of cerebral hemorrhage. Hence it seemed to be advantageous to study the cases in separate groups according to cause or type of death.

I do not wish by the insertion of tables to overemphasize the value of presenting data in the form of statistics. In this regard Raymond Pearl quotes Greenwood: "There is no intrinsic merit in numbers or percentages or in coefficients of correlation; their value is in aiding us to think clearly and in compelling us to express conclusions in a language which all may master if they choose." The correlations have been compared with the probable errors from random sampling and in certain tables the frequency distribution has been compared with the standard deviation. This means of judging the significance of the figures was especially necessary in view of the small series of cases presented, which in turn resulted from the difficulty of securing a continuous clinical picture of such cases to death.

7. Bainton, J. H.; Levy, R. L.; Munly, W. C., and Pardee, H. E. B.: Criteria for the Classification of Heart Disease, New York, Paul B. Hoeber, 1928.

TABLE 3.—*Length of Life from Onset of Symptoms*

	Cumulative Percentage of Patients Dead at End of Period Named:									
		Years								
Type of Death	6 Mos.	1	2	3	4	5	6	7	8	9
A. Anginal syndrome	25	46	50	75	86	86	93	93	93	100
B. Congestive failure	7	15	42	54	64	70	73	85	91	97
C. Other causes	7	20	40	53	67	73	93	93	93	100

Also it is not intended to imply any certainty of the general applicability of the data obtained. Moreover, of the living patients presenting the anginal syndrome when first seen, 70 per cent still present a predominant anginal picture; similarly, of those showing at the onset symptoms of congestive failure, only 10 per cent have anginal symptoms at the present time.

LENGTH OF LIFE FROM ONSET

The average length of life of those who died was 3.5 years from the onset of symptoms; of the living patients, 4.3 years from onset to date. For those dying of the anginal syndrome the average length of life from the onset of any cardiac symptom was 3.2 years; for those dying of congestive failure it was 4.3 years. Such averages, however, hide as much information as they yield. It was more informative to note the number of patients dead at the end of successive periods from onset of symptoms.

Table 3 shows that, of the patients dying of the anginal syndrome, one fourth were dead within six months of the first symptom, nearly one half at the end of the first year, and three fourths by the end of the third year. Only 7 per cent lived after the sixth year. In contrast, of those dying of congestive failure, one fourteenth, one sixth and one half were dead at the same intervals. In the group who died of noncardiac causes the length of life was similar to those dying of congestive failure.

TABLE 4.—*Length of Life from Onset According to Certain First Symptoms*

	Cumulative Percentage Dead at End of Interval Named:									
		Years								
First Symptom	6 Mos.	1	2	3	4	5	6	7	8	9
Angina	35	50	50	65	75	80	85	85	90	100
Dyspnea	4	18	41	60	70	70	74	92	92	96
Dyspnea and angina	14	29	57	71	71	85	85	85	85	100
Other symptoms	4	18	41	59	68	77	86	86	95	100
All symptoms	13	28	45	62	71	76	82	88	92	98

Since a life expectancy based on death data is hardly useful in prognosis, a similar table showing length of life was based on the first symptom (table 4). Of the patients showing angina (including coronary occlusion) as the first symptom, 35 per cent died within six months and 50 per cent died within a year. This contrasts greatly with the patients in whom dyspnea was the first symptom; 4 per cent and 18 per cent were dead

at the intervals stated. After the first year the first symptom did not so materially affect the length of life.

CORRELATION OF VARIOUS FACTORS WITH LENGTH OF LIFE FROM ONSET

Sex.—In White's series of cases of angina pectoris there did not seem to be an association between sex and length of life based on the patients living or dead at the end of the five year period. In the present series, while the seventh year equalized the difference, men showed a distinctly greater tendency to die early than did women (table 5). Likewise the average length of life of the men was 3.3 years from onset as compared with 4.1 for females. This fact may be related to occupation.

Occupation.—From the present series it would be unsafe to attempt precise conclusions regarding the possible effect of occupation on the length of life. The series was too small to yield large enough numbers in the various occupational groups to present data on the percentage dead at successive intervals. Also, because of age or disability, many of the patients had retired from active occupations prior to or during the period of heart symptoms. Hence only the average length of life is considered (table 6). The figures suggest a shorter length of life for farmers and unskilled laborers.

TABLE 5.—*Sex and Length of Life from Onset*

	Cumulative Percentage Dead at End of Interval Named:									
		Years								
	6 Mos.	1	2	3	4	5	6	7	8	9
Men	14	31	48	68	74	81	84	87	90	98
Women	7	14	29	36	57	57	71	93	100	
Total	13	28	45	62	71	71	81	88	92	98

Average length of life of men, 3.3 years
Average length of life of women, 4.1 years

Age at Onset.—There was apparently a definite correlation between the age at onset of symptoms and the length of life after onset (table 7). Comparing the age at onset of the living and dead patients, it was apparent that the former were a younger group. This may have explained their greater average length of life.

CORRELATION BETWEEN CERTAIN SYMPTOMS AND SIGNS AND LENGTH OF LIFE

In many cases, signs or symptoms had been present for varying lengths of time prior to my examination of the patients, but as the time of the onset could not be established accurately in many cases, the comparative length of life is dated from the examination.

Dyspnea at Rest.—Table 8 makes a comparison of the presence or absence of dyspnea at rest in the seventy-six patients who died and the three subgroups considered separately. Only one (10 per cent) of the patients, dying later of the anginal syndrome (group A) and showing this symptom at the first examination lived over a year, and 73 per cent were dead within six months, while of those in this group showing no dyspnea at rest 18 per cent lived over a year and only 50 per cent died within six months. Groups B and C present similar differences in length of life for those with and without this symptom. In the whole group of seventy-six patients only two of those with dyspnea at rest lived over three years, none lived over four years, and 60 per cent were dead within six months.

Angina and Coronary Occlusion.—A similar comparison of the patients with and without attacks of anginal pain at the time of the first examination is shown in table 9. It seems to show that anginal attacks occurring only on exertion did not materially shorten the subsequent length of life but that angina at rest or definite coronary occlusion did markedly shorten it.

TABLE 6.—*Average Length of Life from Onset and Occupation*

	Dead Patients	Living Patients	Total
Business	2.6 years	5.3 years	3.8 years
Professions	2.1 years	5.4 years	4.3 years
Housewives	3.6 years	4.2 years	4.0 years
Skilled labor	4.6 years	2.8 years	4.0 years
Unskilled labor	0.4 years	3.6 years	2.5 years
Farmers	3.0 years	4.0 years	3.3 years
All others	4.3 years	3.6 years	3.8 years

No patient with attacks of angina decubitus at the time of examination lived over fifteen months and one half of such patients were dead within six months. None of the patients with coronary occlusion lived over six months. There was no apparent difference in the outlook for those with substernal and those with precordial pain.

Paroxysmal Dyspnea.—In studying the subsequent length of life of the dead patients, with and without attacks of paroxysmal dyspnea (cardiac asthma) at the time of the first examination, it was noted that except in those who also had attacks of angina there was no apparent shortening of life as compared with those patients without paroxysmal dyspnea. In the patients, however, who had both anginal attacks and attacks of paroxysmal dyspnea, the length of life was considerably shorter than in those with paroxysmal dyspnea alone or in those with anginal attacks (including coronary occlusion) alone. No patient with both types of attack lived over a year and 67 per cent were dead within six months (table 10). In the patients in whom paroxysmal dyspnea and a recent coronary occlusion were noted at the first examination, none lived over two months and 80 per cent were dead within one month.

TABLE 7.—*Age at Onset and Length of Life from Onset*

	Cumulative Percentage Dead at End of Period Named:									
		Years								
Age at Onset	6 Mos.	1	2	3	4	5	6	7	8	9
Ages under 60	16	21	31	47	47	58	63	74	97	95
Ages 60 to 69	9	38	47	66	72	78	78	88	94	100
Ages 70 to 79	14	19	48	62	81	86	95	95	100	
Ages over 80	25	25	50	50	100					
All ages	13	28	45	62	71	71	81	88	92	98

Age at Onset	Over Length Life	Percentage of Cases
Ages under 60	5.2 years	25
Ages 60 to 70	3.1 years	42
Ages 70 to 79	2.3 years	27
Ages over 80	2.3 years	5
All ages	3.5 years	

Heart Sounds.—If there was a correlation among those who died later between the character of the heart sounds at the first examination and the subsequent length of life, it seemed to indicate a longer life for those with poor heart sounds than those with good or increased sounds (table 11).

Heart Murmurs.—Among the patients who died later, those with murmurs present at the first examination seemed to show a shorter subsequent length of

life; but since the opposite appeared among the living patients and since the differences were not great in either group, the presence of murmurs was considered of no prognostic significance, except in the case of those murmurs appearing after coronary occlusion.

Enlargement of the Heart.—Comparing the presence or absence of general enlargement of the heart in the dead patients, the subsequent length of life was somewhat shorter for those with general enlargement. This was true whether clinical signs or roentgen examination was used to judge heart enlargement. In table 12 the former is presented because of the large number of cases.

When, however, the comparison was made according to the degree of enlargement, the correlation was not very clear. This fact, and the fact that among the living patients with and without enlargement there was no significant difference, leads to the conclusion that not much prognostic weight should be given to this factor. There was a much more clear correlation between blood pressure and cardiac enlargement than between length of life and cardiac enlargement.

No correlation was apparent between subsequent length of life and the size of the aortic shadow at the time of the first examination.

Blood Pressure.—There was no apparent correlation between the blood pressure level at the first examination and the subsequent length of life. Of course the dropping blood pressure following coronary occlusion and with myocardial failure carried a serious prognostic significance.

TABLE 8.—*Dyspnea at Rest and Subsequent Length of Life*

		Cumulative Percentage Dead at End of Period Named:					Average Length of Life
		6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Group A	With	73	90	90	90	100	0.5 year
	Without	50	82	94	94	94	1.0 year
Group B	With	56	81	94	94	100	0.8 year
	Without	13	20	47	53	53	3.5 years
Group C	With	33	33	100	..	..	1.5 years
	Without	33	37	50	50	75	2.5 years
Total	With	60	80	93	93	100	0.8 year
	Without	34	50	66	68	77	2.3 years

It is of interest to note that only seven (9 per cent) of the living patients presented this symptom at the time of the first examination, as compared with 40 per cent of those now dead.

TABLE 9.—*Attacks of Heart Pain and Subsequent Length of Life*

	Cumulative Percentage Dead at End of Period Named:					Average Length of Life
	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Angina on exertion	33	52	66	66	86	2.0 years
Angina at rest	50	83	100	..	..	0.5 year
Coronary occlusion	100	..	..	..	..	3 days
No angina	38	52	70	76	81	2.0 years

Of the seventy-seven living patients, five showed attacks of angina at rest and six had attacks of coronary occlusion at the time of the first examination. The average subsequent lengths of life were 1.1 years and 2.3 years, respectively. However, only three have as yet lived over two years from that time, and seven (60 per cent) have lived less than a year.

Peripheral Arteriosclerosis.—There was no apparent correlation between the presence or degree of peripheral arteriosclerosis at the time of the first examination in either living or dead patients and the subsequent length of life. The exception to this lay in those patients dying of cerebral hemorrhage in whom the degree of peripheral arteriosclerosis and the height of the blood pressure seemed related to the length of life.

Premature Beats and Auricular Fibrillation.—Too few of the dead or living patients presented either of these disturbances of rhythm to justify evaluation of their prognostic significance.

Peripheral Edema.—In the dead patients showing edema at the first examination, the subsequent length of life was definitely shorter than in those without edema (table 13). However, in the living patients the difference, though in the same direction, was slight and too great weight should not be given this factor. But of those dead patients showing both angina and edema at the first examination, none lived over eight and one-half months.

ELECTROCARDIOGRAMS

With the wide variety of electrocardiographic abnormalities and the still larger number of possible combinations thereof, no correlation was attempted between the results of electrocardiographic examinations and subsequent length of life. In general, the electrocardiogram seemed of greater value in diagnosis than in prognosis. Certain observations, however, seemed worth noting. Only slurring or splintering of the QRS, inversion of T waves and abnormalities of the RT or ST interval seemed significant; among the dead patients these observations were noted only in those subsequently dying of coronary occlusion, angina pectoris or cerebral hemorrhage and not in those dying of congestive failure. In the living patients all such observations except T wave inversion occurred among those having the anginal syndrome.

TABLE 10.—*Paroxysmal Dyspnea and Subsequent Length of Life*

	Cumulative Percentage Dead at End of Period Named:						Average Length of Life
	1 Mo.	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Paroxysmal dyspnea with angina	33	67	100	..	..	..	0.4 year
Paroxysmal dyspnea without angina	0	0	40	60	80	100	2.2 years
No paroxysmal dyspnea	26	40	66	70	74	84	1.8 years
Angina without paroxysmal dyspnea	34	55	71	82	82	90	1.2 years

Of the four living patients with paroxysmal dyspnea and angina, only one has as yet lived more than a year and that one is bedridden with anginal failure. Of the dead patients showing at the first examination both dyspnea at rest and attacks of paroxysmal dyspnea, only one lived over a year whether or not angina was present.

The observations thus far presented pointed out the marked tendency for patients to follow from the onset to death either the anginal or the congestive syndrome except for these few patients dying of causes other than cardiac. It has been noted that the patient following the anginal syndrome had a shorter length of life than those with other syndromes. It has been suggested that for women the average length of life was about one and one-fourth longer than for men and the probability of dying within the first three years was about one-half as great, that hard physical labor reduced the life expectancy, and that there was a progressive diminution of life expectancy as the age at onset increased. It has been suggested that dyspnea at rest, angina at rest, coronary occlusion and paroxysmal dyspnea when associated with angina decreased the life expectancy. Of less weight but of possible significance in the same direction were enlargement of the heart and peripheral

edema. In the electrocardiogram, QRS and ST changes pointed toward an anginal death.

Table 14 is presented not as a formula for estimating the length of life in all cases of arteriosclerotic heart disease but as a summary of certain data in this particular series.

In view of Mackenzie's[8] remark that statistical methods may be used to prove unreasonable associations

TABLE 11.—*Heart Sounds and Subsequent Length of Life*

	Cumulative Percentage Dead at End of Period Named:						Average Length of Life
	1 Mo.	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Poor sounds	25	37	50	70	72	82	1.8 years
Good or increased sounds	35	53	65	82	88	94	1.2 years

The living patients seemed to show the same correlation.

of clinical phenomena, this question should be raised here. However, the correlations made seemed to be reasonable ones. Thus it is logical to suppose that age at onset, sex and occupation would modify the length of life in any patient with heart disease. Likewise it seems logical that such signs and symptoms of myocardial failure as dyspnea at rest, paroxysmal dyspnea

TABLE 12.—*Enlargement of the Heart and Subsequent Length of Life*

	Cumulative Percentage Dead at End of Period Named:						Average Length of Life
	1 Mo.	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Enlargement	21	48	61	82	88	91	1.4 years
No enlargement	25	39	59	61	64	77	2.2 years

and peripheral edema would be significant. Likewise, in the absence of a satisfactory means of estimating the extent of coronary sclerosis, angina at rest and coronary occlusion may serve as one means of measurement.

Nevertheless, granting the significance of the comparisons made, figures on average length of life or even on the probability of death within a given period are none too helpful in the prognosis of a given case, unless the data presented coincide to a reasonable degree with that of the cases showing especially long or short duration of life. When the records of the individual patients, living and dead, were rechecked, it was found

TABLE 13.—*Edema and Subsequent Length of Life*

	Cumulative Percentage Dead at End of Period Named:						Average Length of Life
	1 Mo.	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.	
Edema present	35	61	77	85	88	92	1.0 year
Edema absent	24	34	50	66	72	82	2.1 years

that very few of those with a long duration of life after the first examination showed at that time the serious prognostic symptoms or signs and that with the later appearance of such signs or symptoms, the subsequent course followed the prediction reasonably well. Likewise, the majority of the patients with a short length of life after the first examination showed at that time one or more of the symptoms or signs stressed and usually the larger the number present, the shorter the duration. Obviously the correlation was far from absolute but it seemed sufficient to provide valuable prognostic data.

Generally speaking, the course of those cases showing the syndrome of congestive failure did not differ a great deal from that of congestive failure due to other etiologic factors except in its shorter duration.

Other factors, not susceptible of statistical evaluation, seemed to enter into prognosis, such as the degree of signs and symptoms, the cooperation with and response to treatment and the presence or absence of other diseases.

PREDICTABILITY OF SUDDEN DEATH

Even more urgent a problem than the length of life of the average patient is the question to what extent the sudden deaths from coronary occlusion can be foreseen. Of my patients dying suddenly of coronary

TABLE 14.—*Summary of Certain Prognostic Data*

	Over Length Life from Onset	Probability of Death Within Period Named:				
		6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.
Age onset						
Under 60 years	5.2 years	16	21	31	47	47
60 to 69 years	3.1 years	9	38	47	66	72
70 to 79 years	2.3 years	14	19	48	62	81
Over 80 years	2.3 years	25	25	50	50	100
Sex						
For women, add 25%						
For men subtract		50%	50%	50%	50%	25%
Occupation						
For unskilled labor and farmers reduce expectancy 25 to 50%						
First symptom						
Angina*		35	50	50	65	75
Dyspnea		4	18	41	60	70
Angina and dyspnea		14	29	57	71	71
Other		4	18	41	59	68

	Length of Life from First Examination					
		Probability of Death Within Period Named:				
	Average	6 Mos.	1 Yr.	2 Yrs.	3 Yrs.	4 Yrs.
Dyspnea at rest	0.8 years	60	80	93	93	100
Dyspnea at rest with angina	0.5 years	73	90	90	90	100
Angina at rest	0.5 years	50	93	100		
Paroxysmal dyspnea and angina	0.4 years	33	67	100		
Enlargement of heart	1.4 years	48	61	82	88	91
Edema present	1.0 year	61	77	85	88	92

* Angina as first symptom makes an anginal death a 4 to 1 probability.
Electrocardiographic changes in the QRS or the ST interval make anginal death probable.

occlusion, all except two gave clear histories of previous symptoms for four weeks to years preceding the fatal attack. The two patients with no such history were seen within twenty-four hours of death at a time when they were so ill that no careful history was possible. All of the patients in whom electrocardiograms were taken except one showed changes in the QRS or ST or both. No patient dying of coronary occlusion on whom a complete examination and history with electrocardiogram and roentgen study had been obtained prior to the occlusion failed to show at the examination a positive result in at least one field: a significant symptom, a physical sign or a positive instrumental observation.

The pathologist shows that the fatal coronary occlusion is not often the first occlusion or that there is usually a preceding extensive coronary sclerosis and myocardial fibrosis. Is it not possible that the apparent unpredictability of sudden deaths lies more in either

8. Mackenzie, James: Principles of Diagnosis and Treatment of Heart Disease, London, Oxford University Press, 1918.

the failure of the patient to interpret the symptoms as sufficiently serious to warrant consultation with a physician or in the incompleteness of the average examination than in the insufficiency of the physician's prognostic armamentarium? Perhaps more should be done to educate the man over 50 years of age in the significance of certain symptoms and urge that at 50 a complete examination, including an electrocardiogram, dissociated from questions of insurance or employment, might at least show danger signals if it did not prolong life.

SUMMARY

In the present paper I have attempted to evaluate certain prognostic data in arteriosclerotic heart disease. While the incompleteness of the data presented is recognized, a plea has been made against an undue attitude of hopelessness in approximating the outlook for this type of heart disease.

Deseret Bank Building.

ABSTRACT OF DISCUSSION

DR. WALTER L. BIERRING, Des Moines, Iowa: Dr. Viko's criteria with reference to prognostic significance seem to be based on two facts: the development of anginal symptoms and those of visceral congestion, both in a sense representative of a terminal stage. It is safe to assume that a rather long period of anatomic change has preceded the first recognition of these symptoms, which makes it difficult to determine just when the process begins and what meaning can be placed on certain disturbances that occur during the course of so chronic a process. Arteriosclerotic heart disease, while accompanied frequently by coronary occlusion, does not appear to have the prognostic significance in later years that it might have when such an occlusion occurs in earlier life. It is generally thought that during the gradual narrowing of the arteries and the branches of the coronary there will be intermittent attacks of angina, but at the same time a gradual collateral circulation is brought about, which promotes a certain improvement in the coronary circulation. Thus one finds instances in arteriosclerotic heart disease in which the anginal attacks gradually become less, or at least less severe, indicating the difficulty to recognize and interpret anatomic changes in the myocardium and to what extent these may be developing. It is timely to refer to certain racial and vocational influences on the development of arteriosclerosis, which modify to a certain extent one's conception of the disease. The racial characteristic of the Negro toward arteriosclerosis is well known. Having lived for many years in a region rich in bituminous coal deposits, I have come to recognize arteriosclerosis at a much earlier age. There can be no doubt, and this seems to be confirmed by similar observations in the coal districts of Wales and northern England, of the greater tendency in coal miners toward thickening of the arteries in the young adult. Soon after a year's exposure to underground life, a thickening begins to manifest itself. In the Mississippi Valley, where coal deposits are extensive, it is frequently noted that the average coal miner at 55 looks as if he had finished his allotted three score and ten. The frequency of death in coal miners from arteriosclerotic heart disease after 55 is so common as to permit its consideration as an occupational disorder. This is thought to be largely due to the alteration of the atmosphere, particularly the content of carbon dioxide, and the absence of daylight. It is also interesting that at the International Conference on Geographic Pathology the latter part of July in Utrecht, Holland, the main subject is arteriosclerosis, showing that it is becoming recognized as peculiar to certain geographic areas. The difficulty of properly interpreting certain prognostic signs is becoming more evident.

DR. R. WESLEY SCOTT, Cleveland: Although the term arteriosclerotic heart disease is gaining in popularity, certain objections to its use are apparent. A patient with vascular disease — arteriosclerosis — may or may not develop signs of myocardial insufficiency. If he does, two factors appear, which singly or combined may ultimately lead to heart failure. These are hypertension and coronary disease. Why not then use the term hypertensive heart disease to designate that group of patients dying of heart failure whose clinical course is dominated by hypertension, and the term coronary disease for that group (with or without hypertension) whose heart failure is more clearly associated with muscle damage secondary to coronary artery sclerosis and whose clinical course is often characterized by angina pectoris, coronary thrombosis or both? Such a classification is more easily comprehended by students and more likely to lead to straighter thinking in the therapeutic management of patients. Dr. Viko feels that prognosis in arteriosclerotic patients with cardiac symptoms is not so uncertain as many believe, but the average age of his series of 150 patients was 67.5 years. In other words, the majority of his patients survived seven and one-half years longer than the average American at the present time. Human arteriosclerosis is notoriously capricious in its distribution, and so long as there is no direct means of knowing the state of the coronary arteries, the prognosis will necessarily remain uncertain. Even in hypertensive cases the future, so far as the heart is concerned, is determined by the state of the coronary vessels in the majority of instances. In a large series of autopsies on patients dying of hypertension I have been impressed by the relation between the heart weight and the state of the coronary arteries. Patients who survive long with hypertension and develop heavy hearts (from 600 to 700 Gm.) are in the great majority those in whom the coronary vessels are less seriously diseased than those persons who succumb with a heart weight of from 400 to 500 Gm. It seems to me that the most certain feature of prognosis in so-called arteriosclerotic heart disease is its uncertainty.

DR. LOUIS E. VIKO, Salt Lake City: I do not wish to overemphasize the value of presenting data in the form of statistics. As Raymond Pearl quotes Greenwood, "There is no intrinsic merit in numbers or percentages or in coefficients of correlation. Their value is in aiding us to think clearly and in compelling us to express conclusions in a language which all may master if they choose." The correlations have been compared with the probable errors from random sampling and in certain tables the frequency distribution compared with the standard deviation. This means of judging the significance of the figures was especially necessary in view of the small series of cases presented, which in turn resulted from the difficulty of securing a continuous clinical picture of such cases to death. Also, it is not intended to imply any certainty of the general applicability of the data obtained. But even granting the significance of the comparisons made, figures on average length of life or even on the probability of death within a given period are none too helpful in the prognosis of a given case unless the data presented fit reasonably well the cases with especially long or short duration. When the records of the individual cases were rechecked, it was found that very few of the patients, living or dead, with a long length of life after the first examination showed at that time the serious prognostic symptoms or signs noted, and that with the later appearance of such signs or symptoms the subsequent course followed reasonably well the prediction. Likewise, the majority of the cases showing a short length of life after the first examination presented at that time one or more of the symptoms or signs stressed, and usually the more such present, the shorter the duration. Obviously, the correlation was far from absolute but seemed sufficiently so to provide valuable prognostic data. It was particularly interesting to compare the cases in which death occurred from coronary occlusion with those cases in which attacks of coronary occlusion were apparently as severe and yet the patients lived, or with the patients dying of the anginal syndrome. Seven died sudden deaths from coronary occlusion. In varying degree, these were unexpected because of their almost instantaneous character. It is noticeable that all these patients except one had been having angina at rest without dyspnea for days to months before the final attack. Likewise, five of the seven had signs of myocardial failure, such as attacks of paroxysmal dyspnea, liver enlargement or edema previous to the attack.

OVARIAN CYST

REPORT OF AN UNUSUAL CASE WITH RECOVERY FOLLOWING OPERATION

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During the past decade it has become rare to encounter cases of abdominal tumor weighing 50 pounds or more. Occasionally, in the past, enormous fibroids and other tumors of the female genital organs were seen, but progress in medicine and surgery has been such that now most cases are detected and treated before any tumor reaches the 50 pound stage. In a review of the literature we have been unable to find a case of ovarian cyst with recovery approximating the one reported here. The tumor weighed about 175 pounds (80 Kg.). There have been two cases of cystic ovaries reported larger than this one, both during the nineteenth century. One occurred in Europe [1] in 1890 and the other [2] in Baltimore in 1834. However, the former patient died after operation and the latter was discovered only at necropsy.

REPORT OF CASE

History.—Mrs. J. H. K., aged 47, was first seen at home, April 6, 1934. Until this date, no physician had seen her since the birth of her only child twenty years previously. There were no miscarriages or abortions. The family history is negative except that all members for two generations have been obese. She had never had a serious illness or operation of any kind. She had consistently refused to consult a physician until this date, and then only because she had suffered all night from shortness of breath.

Fig. 1.—Lateral view of patient on day of admission. Shrinkage of the skin of the thighs (the patient previously had very obese legs) and enlarged superficial abdominal vessels are shown.

The patient was in bed, lying on her right side. The respirations were labored. She declared she could not lie on her back and had not been able to do so for two years. She stated that she could lie on either side but that it had become necessary at night to have members of the family "lift her stomach" from one side to the other. When erect the patient had been able to move about freely and had performed almost all of her housework except washing, and said that she would have done that but couldn't get close enough to the tub.

Fig. 2.—Front view. The lower end of the abdominal wall extended as low as the knee joints.

Fig. 3.—Just before operation, four days after admission. The abdomen was pendulous after the removal of 16½ gallons of fluid.

There was a loud systolic murmur heard best at the apex. The blood pressure was 158 systolic, 112 diastolic. The menstrual history was normal until fourteen months before, when the menses ceased for nine months but had resumed and had been regular for the past three cycles.

The following day the patient was admitted to the hospital. Her chief complaint was shortness of breath. She had been unconscious of any enlargement of the abdomen until about five years before.

Examination.—The patient weighed 295 pounds (134 Kg.). The temperature was 100 F. The pulse rate was 100, the respiratory rate 28. The blood pressure was 170 systolic, 110 diastolic. Moist râles were heard at the base of both lungs. The heart beats were irregular and there was a loud systolic murmur. The abdomen was enormously distended and was flat on percussion. Bimanual examination was impossible. Large varicose veins on both legs and on the abdominal wall were noted.

The urine was amber colored, cloudy, and acid in reaction; the specific gravity was 1.020; it showed albumin, 3 plus, and was negative for sugar. The microscopic examination showed hyaline casts, 3 plus; occasional granular casts; epithelial cells, 3 plus; pus cells, 2 plus.

1. Buffet: Colossal Cyst of the Ovary, Normandie méd. **5**: 19 (May 19) 1890.
2. Heintze, F. E. B.: N. Am. Arch. M. & S. Sc. **1**: 3, 1834-1835.

The blood examination showed hemoglobin 75 per cent; erythrocytes, 3,500,000; leukocytes, 8,000; small lymphocytes, 20 per cent; polymorphonuclear neutrophils, 80 per cent.

A preoperative diagnosis of ovarian cyst was made. Ascites was considered but was ruled out by the absence of edema of the extremities.

Operation and Result.—Under local anesthesia a trocar was passed through the abdominal wall, a number 16 French catheter was inserted, the trocar was withdrawn, and the skin and fascia closed firmly around the catheter. This method permitted very little leakage. Two gallons of dark fluid was withdrawn, which on laboratory examination showed disintegrated blood cells; the tube was clamped. The lower portion of the chest and the upper part of the abdomen were taped with adhesive plaster. A firmly fitting abdominal binder was applied and carefully tightened after each withdrawal of fluid. April 10, a total of 16½ gallons of fluid, carefully weighed

Fig. 4.—Front views of patient fourteen days after operation. *A*, with binder; *B*, without binder.

and measured, had been withdrawn. April 12, under spinal anesthesia, the collapsed cyst was delivered through a 5 inch incision. It had originated from the right ovary, to which it was attached by a pedicle about 2 inches wide. The uterus was normal in size and was prolapsed. The left tube and ovary were normal. The cyst and approximately 2 quarts of free fluid in the peritoneal cavity were removed. Two small fibroid tumors on the anterior wall of the uterus were removed and the uterus was suspended.

The gallbladder was very much enlarged. A second incision was made over the gallbladder region. As it was deemed advisable to expedite the operative procedure, a simple drainage was instituted. Forty-one gallstones, about one-fourth inch in diameter, were removed.

The cyst wall weighed 27 pounds (12 Kg.) and the patient's weight following operation was estimated to be 120 pounds (54.4 Kg.). The patient was apparently entirely free from pain and shock during the operation. She had the general diet on the third postoperative day and noticeably began to increase in weight. The sutures and gallbladder drain were removed on the tenth day. She sat in the wheel chair on the eleventh day and on the fifteenth day, with assistance, walked from the hospital to a waiting car. At this time her weight was 132 pounds (60 Kg.).

Five days later she returned for dressing of the wound and walked into the hospital unassisted. Both wounds had healed and there was a definite shrinkage of the excess skin. Her weight was 143 pounds (65 Kg.). She stated that she would never consent to an operation for removal of the excess skin, saying "If they give me enough to eat, I'll need all of it." The urinalysis was negative and the systolic murmur had disappeared. May 16 she weighed 146 pounds (66 Kg.). When last seen, May 24, she weighed 149 pounds (67.6 Kg.).

COMMENT

This case is interesting because of the enormous size of the tumor and the unusual recovery. We feel that the gradual withdrawal of the fluid together with a compression binder was a life saving measure. The use of spinal anesthesia together with the excellent resistance of the patient played a part in the successful outcome.

115 West Main Street.

ALLERGIC RESPONSE TO DUST OF INSECT ORIGIN

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This paper deals with a source of atopen in the group of insect emanations not hitherto demonstrated. The allergic response was observed in persons working on the control of the New Mexico range moth caterpillar and was acquired after contact with the eggs and parasite flies.

There have been a number of recent contributions to the subject of insect allergy. Insect dust sensitization was reported in 1928 by Vaughan,[1] who found an allergic response to moth dust contained in feather pillows. Parlato[2] in 1929 established the etiologic relation of caddis fly emanations in a patient with seasonal asthma and hay fever. The distressing symptoms occur when the patients go to the lake shore during the caddis fly season. Negative pollen reactions resulted in the search which revealed the excitant in the fine hairs and epithelia shed by the fly. Positive skin reactions and passive transference of sensitization together with successful hyposensitization were reported. One hundred and ninety-two known allergic cases were tested, with a positive reaction in 7.2 per cent. In a recent article he[3] reported thirty-two such cases treated, with good results.

Figley[4] in 1929 successfully treated one patient with asthma with an extract of the May fly, the preparation being made from the shed skins of the subimago stage.

Benson and Semenov[5] made a study of extracts of the bee's body and its sting on a bee keeper with hay fever and asthma. It was found to be (apparently) the exclusive cause of the symptoms, and they brought about relief of the asthma by increasing the patient's tolerance both to the dust as an inhalant and to the bee's sting.

1. Vaughan, W. T.: Some Causes for Failure in Specific Treatment of Allergy, J. Lab. & Clin. Med. **13**: 955 (July) 1928.
2. Parlato, S. J.: Case of Coryza and Asthma Due to Sand Flies (Caddis Flies), J. Allergy **1**: 35 (Nov.) 1929.
3. Parlato, S. J.: Hypersensitiveness to the Emanations of Caddis Flies (Trichoptera), J. A. M. A. **102**: 910 (March 24) 1934.
4. Figley, K. D.: Asthma Due to the Mayfly, Am. J. M. Sc. **178**: 338 (Sept.) 1929.
5. Benson, R. L., and Semenov, H.: Allergy in Its Relation to Bee Sting, Allergy **1**: 105 (Jan.) 1930.

Without investigation as to the exact nature of the phenomena, in 1915 Mr. Caffrey [6] observed that continual contact with eggs and larvae of the New Mexico range moth had produced a tendency to violent attacks of coughing and severe wheezing, which sometimes lasted for several days. He also noted that coryza appeared in many helpers who had worked with the eggs and larvae for a few months and that the violence of the urticarial reaction produced by contact with the caterpillar spines became much more marked after handling them for succeeding seasons.

REPORT OF CASE

The case of bronchial asthma here reported was caused by daily contact with these products in the work of controlling the New Mexico range moth caterpillar. The patient had been working on the problem since 1930. The chief complaint was sneezing and coryza, nocturnal dyspnea and wheezing.

There was no history of allergic disease in the family.

The patient had had malaria in 1916 and typhoid during his youth. In July 1929 he was seen for an acute respiratory infection with a temperature of 102 F., chills, general malaise, and dry cough; no dyspnea and no sibilant râles were noted on physical examination. The blood showed moderate leukocytosis with 6 per cent eosinophilia. Fresh stool examination was negative for parasites.

Reactions to Dust Specimens Collected from Patient's Laboratory

Dust Specimen	Reaction
1. Freshly collected and killed fly Anastatus semiflavidus Gahan (parasite fly)	Negative
2. Unparasitized eggs of the range moth Hemileuca oliviae, Cockerell	0.75 cm., ++
3. Old dry wings of the New Mexico range moth	Negative
4. Dust from the floor of the laboratory	2 cm., ++++
5. Dust from the floor of the incubation cages in which the parasitization process took place	1.8 cm., ++++
6. Combined May fly extract furnished me by Parlato of Buffalo	1.8 cm., ++++

Feb. 2, 1933, the patient was examined in the office because of coryza, wheezing, coughing and dyspnea. The coryza had been present to some extent since shortly after he began to work on the range caterpillar control problem but had been considerably worse during the last two years, the symptoms showing slight exacerbation during the winter months.

Nocturnal asthmatic breathing and cough had been present almost continuously since September 1932. During that month he had been working in the laboratory at Tempe, Ariz., but he had spent the month of October on the range in New Mexico, at an altitude of more than 5,000 feet, gathering some eight million range moth eggs. He came back to Tempe, where he had spent several hours a day since November in the small poorly ventilated incubation room in which the eggs, larvae and parasite fly Anastatus semiflavidus (Gahan) were housed, stringing eggs on wires and placing them in incubation cages with the parasite flies. The parasitized moth eggs are shipped to the range, where they are allowed to propagate the parasite fly.

The patient was exposed to inhalation of the fine dust from dried specimens of eggs in the various stages of parasitization and emergence and to the dust of the empty shells of eggs from which a few of the range moth larvae emerged. He handled very few of the range moths, as the only specimens in the laboratory were kept in tightly covered boxes. Sometimes a few of the larvae of the range moth were hatched but were destroyed. Many of the parasite flies were hatched, to be used in parasitizing other moth eggs. In transferring these tiny flies a suction bottle was used, the fly being drawn into the bottle by placing the opening of the tube in its vicinity, then drawing on the other tube. In this way he inhaled much dust from the floor of the incubation cages.

6. Caffrey, D. J.: J. Econ. Entomol. **11**: 363 (Aug.) 1918.

On physical examination the patient was tall and slender and not in robust health. The temperature was 98.6 F., pulse 80, height 6 feet 1¼ inches (186 cm.), and weight 156 pounds (70.8 Kg.). The nasal mucous membranes were markedly thickened and injected. The pharynx was normal. The heart sounds were clear and normal. The lungs showed numerous scattered sibilant râles over the bronchial areas both front and back. Fluoroscopic examination revealed no evidence of infiltrative lung changes. The heart shadows were normal. The abdomen and extremities were normal.

SKIN TESTS

The common pollens of this vicinity by both scratch and intradermal methods were found to be negative. Dust specimens were collected from the patient's laboratory, and Coca's solution extracts were prepared from material obtained as shown in the accompanying table.

Ventilation of the laboratory was through a small floor ventilator only, so that outside dust was kept at a minimum. In order to determine more conclusively the source of the atopen, skin tests were made with Coca's solution extract of larvae hatched in a cotton stoppered test tube and the empty egg shells after emergence of the larvae. These produced the strongest skin reactions.

February 27, 0.03 cc. of a 1 to 500 by weight solution extract of combined larvae and egg shell dust with an equal dose of the combined fly atopen furnished by Parlato was given. Intracutaneous injections were continued three times a week for two weeks, the dose gradually being increased. After the third injection the patient had a reaction within an hour after the treatment; wheezing and coughing were similar to that which had occurred at night, and there was a more marked local reaction than usual. On two other occasions, mild reactions of a similar nature were experienced. After two weeks the patient received 0.15 cc. of my extract about once a week. Each intradermal injection resulted in an urticarial welt about 3 cm. in diameter and in swelling of the arm from 3 to 4 inches along the arm, and the thickening remained for a day or two. Within two weeks after these injections were begun the nocturnal wheezing and coughing ceased. There was very definite improvement in the rhinitis, although not complete relief. The patient has continued at the same work since February and has been practically free from symptoms. During the summer and fall the injections were given at intervals of three weeks. There was a slight return of wheezing during October for three or four nights. These symptoms were quickly controlled by increasing the frequency of the injections.

Passive transference was demonstrated by sensitizing a nonallergic skin with 0.1 cc. of the patient's serum. One week later New Mexico range moth caterpillar extract gave a positive reaction at this site, whereas the control reaction was negative. Retesting this skin area one week later gave a negative reaction, showing rapid desensitization.

Of thirty hay fever patients tested to the extract, two were found to show a two plus reaction, the others a negative reaction. One individual in occasional contact with the laboratory was found to react negatively. One man who has been working for about two years under essentially the same conditions began to have slight hay fever symptoms shortly after beginning his work. He was found to give a four plus reaction to the extract. His symptoms were hardly distressing enough to bring him under treatment, but during October 1933, while he was collecting eggs and specimens, asthma developed.

CONCLUSIONS

This work demonstrates the presence of atopic substances in the coverings of the New Mexico range moth caterpillar, in the spines of the larvae and in the material left behind in the egg shells after emergence of the larvae, capable of producing hay fever and asthma in an entomologist whose work required con-

tact with the offending substance. Successful hyposensitization therapy was carried out.

Few allergic individuals give a weak positive reaction to this substance.

1005 Professional Building.

Clinical Notes, Suggestions and New Instruments

AUTOMOBILE JACK FOR FRACTURED SPINE

EDWIN W. RYERSON, M.D., CHICAGO
Professor of Orthopedic Surgery, Northwestern University Medical School

This apparatus provides a cheap and remarkably efficient means of producing any desired degree of hyperextension of the dorsolumbar spine and makes easy the application of a

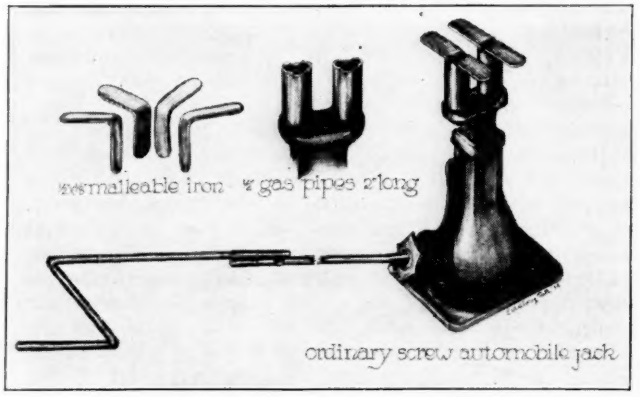


Fig. 1.—Materials for making apparatus.

plaster-of-paris jacket in dorsal recumbency. It is particularly valuable in the forcible correction of compression fractures of the spine. It is a combination of an ordinary automobile screw-jack with a simple device that I[1] described in 1907. Two short pieces of half inch gas pipe, 2 inches long, are brazed vertically to the top of the jack, about an inch apart. Four flat strips of iron measuring ½ by ⅛ by 4 inches are bent at the middle to a right angle and two of them are slipped into each gas pipe (fig. 1). This makes two T shaped supports on which will rest the kyphosis, protected by a thick piece of felt 4 or 5 inches square. The head and shoulders rest on

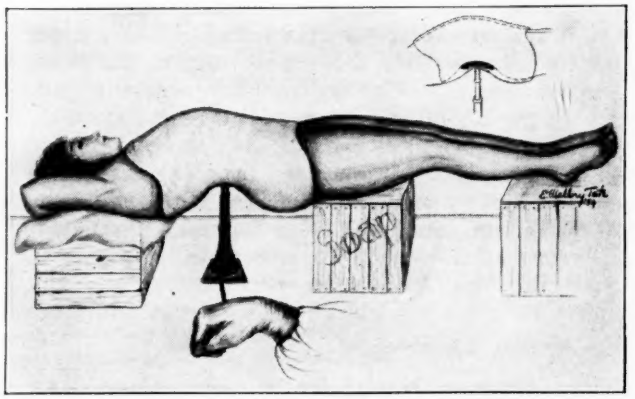


Fig. 2.—Patient supported by apparatus.

boxes, and the buttocks and legs are similarly supported, padded with pillows or folded blankets (fig. 2).

A stockinet undershirt has been previously applied, and felt pads are placed over the anterosuperior spines of the ilium. An anesthetic, if necessary, is administered. The jack is now elevated as far as the operator desires and will produce any degree of hyperextension. A "dinner pad" is advisable over the epigastrium in cases in which extreme hyperextension is used and can be removed through a good sized window in the cast. Sheet wadding or other padding can be applied at the operator's discretion.

Plaster-of-paris bandages are now wound around in the ordinary way and reinforced by a couple of longitudinal folded strips or Soutter "ropes" in front and back. When the plaster has set, the patient is lifted up and placed face downward on a bed or cart (fig. 3). The four small angle irons will be

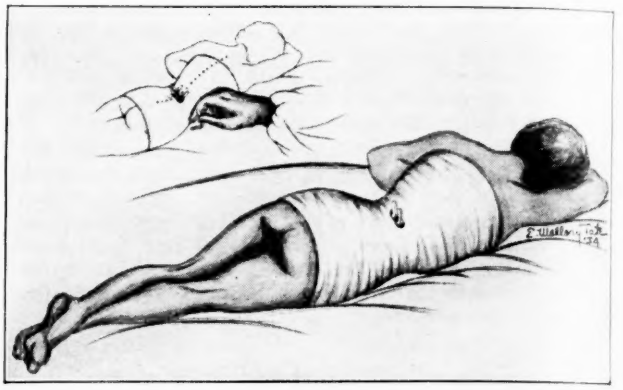


Fig. 3.—After plaster has set.

found projecting through a hole in the back of the cast and can easily be pulled out.

This apparatus can be used equally well in cases of Pott's disease and for some cases of scoliosis.

The cost was $3 for the jack and $1.50 for brazing on the pipes and making the angle irons.

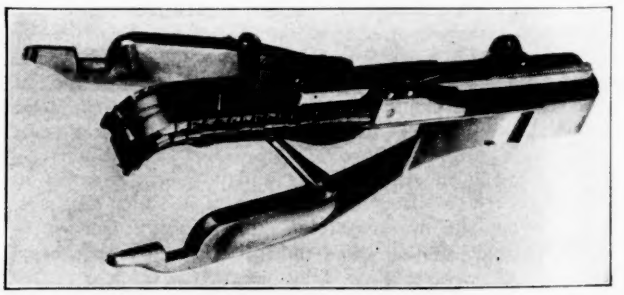
122 South Michigan Avenue.

1. Ryerson, E. W.: Am. J. Orthop. Surg. **4**: 390 (April) 1907.

AN INSTRUMENT FOR HEMOSTASIS OF THE SCALP

PERCIVAL BAILEY, M.D., CHICAGO

Surgeons have long sought for a satisfactory method of securing hemostasis of incisions in the scalp. The one almost universally adopted in the United States employs hemostats,



Instrument for the rapid application of Michel clips.

which are placed on the galea and curled backward over the scalp. This method is satisfactory for the outer margin of the incision of the ordinary osteoplastic craniotomy, but on the inner margin the hemostats are very much in the operator's way, fall into the wound and generally cause much nuisance and loss of time. Various types of clamps have been devised from time to time to replace the inner row of hemostats but have never been entirely satisfactory. The ordinary Michel clips work very well and do no damage to the edge of the skin but have heretofore been difficult and tedious to apply. I was therefore much pleased to find an instrument in use by Dr. Clovis Vincent of Paris which permitted the rapid application of Michel clips.

The instrument, which is manufactured by M. Haran, 40 rue St. Jacques, Paris, France, feeds a magazine of Michel

clips into the jaws of a thumb-forceps as rapidly as the surgeon can work his fingers. It worked perfectly for any incision on which the instrument could be held perpendicularly but failed to work well on incisions of the scalp, because the clips fed into the forceps by gravity. To obviate this defect, Mr. C. Ridel of the Yerkes Observatory devised a rider and rachet, which is attached to the top of the instrument. The magazine kicks backward from under the rider, which retains its place by inertia and thus keeps the clips feeding into the jaws of the forceps when held in any position. The instrument is now quite satisfactory and rapid in action and the heavy hemostats no longer give trouble.

The instrument is shown in the accompanying illustration.

950 East Fifty-Ninth Street.

THE ARTHUS PHENOMENON: REPORT OF A CASE

FRED E. ROSS, M.D., ERIE, PA.

A local necrosis following infrequently repeated subcutaneous injections of horse serum was first noted by Arthus, experimenting with rabbits, in 1903. He described the occurrence of a characteristic set of symptoms which has since been known as the Arthus phenomenon. The symptoms seem to be due to an anaphylactic reaction of antibodies with a specific antigen, which results in the formation of a toxic substance causing local necrosis in the tissues. The reaction is specific for the antigen used.

Since the publication of these and other studies, clinical instances of the Arthus phenomenon have been recorded in the literature with increasing frequency. The results of an exhaustive study of the clinical and serologic aspects of the condition have been reported by Tumpeer and Cope.[1] A case exhibiting this phenomenon is here reported.

A boy, aged 4½ years, had been given toxin-antitoxin for diphtheria immunization a year previously. November 22, he sustained a scalp injury and the attending physician administered a prophylactic injection of tetanus antitoxin. Three days later he had a temperature of 104 F., a generalized erythematous rash, vomiting and a sore throat with cervical adenitis. The symptoms so closely resembled those of scarlet fever that the physician administered a therapeutic injection of scarlet fever streptococcus antitoxin in the buttock. The efflorescence cleared up in a few hours, but the site of the injection immediately became indurated and erythematous, and a lesion developed which spread with such fulminating intensity that when seen, December 1, the skin and subcutaneous tissues of the entire thigh, hip and abdomen were involved in a huge necrotic sloughing mass. The patient died as the result of sepsis that evening. Permission for an autopsy was not obtained.

Clinical instances of this phenomenon demand attention and consideration for at least two reasons: first, they stress the importance of the use of toxoid, which contains no serum, instead of toxin-antitoxin as an agent for immunization against diphtheria and, second, they show that the greatest caution must be used in the administration of any type of serum to a patient showing symptoms that might possibly be manifestations of anaphylaxis.

1044 West Seventh Street.

1. Tumpeer, I. H., with the technical assistance of Cope, Elizabeth J.: The Arthus Phenomenon: A Serologic Study in a Syphilitic Child with a Fatal Reaction to Transfusion, Am. J. Dis. Child. **45**: 343 (Feb.) 1933.

Scientific Methods a Modern Development.—Let me remind you that the general use of exact scientific methods in medicine is quite a modern development. It is hardly more than a hundred years ago that such simple methods as percussion and auscultation came into common use. Auenbrugger was alive at the beginning of the nineteenth century, and Laënnec did not die until 1826. Even so simple an instrument as the clinical thermometer, occasionally used in a primitive form as early as the seventeenth century, did not come into general use until after the publication, in 1868, of Carl Wunderlich's treatise on bodily heat in relation to disease.—Blumer, George: Some Discursive Remarks on Bedside Diagnosis, *Yale J. Biol. & Med.* **6**:571 (July) 1934.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

ALTHERM EYE PAD ACCEPTABLE

The E. B. Meyrowitz Surgical Instruments Company, Inc., New York City, recommends the Altherm Eye Pad as a convenient device for applying heat to the eye.

The term "Altherm," according to the firm, is a coined name. The syllable "Al" was taken from its trade mark "ALPHA" (rubber products) and "Therm" to indicate its heating properties.

The mixture (heat-retaining element) used in the pad is nonirritating and noninflammable. When the pad is boiled for a short time, the contents liquefy. After removal from boiling water and in ordinary room temperatures the mixture gradually recrystallizes as it gives off heat. The action makes use of the latent heat of crystallization. The contents do not need renewing after each time the pad is used.

The total weight of the thermophoric mixture amounts to about 4 ounces avoirdupois, or approximately 112 Gm., of which the component parts are:

	Per Cent	Gm.
Sodium acetate	90.5	101.4
Glycerin	03.0	3.3
Sodium sulphate crystals	02.0	2.2
Sodium sulphate (anhydrous)	04.5	5.1
	100	112.0

The general shape of the pad is not unlike a tetrahedron, the three sides being made of heavy gage rubber to cut down on the radiation and the fourth side, the base, designed for applying heat directly to the eye, being made of thinner gage rubber, supported by a metal plate. This construction was designed to prevent pressure on the eyeball and so shaped as to rest on the bony rim of the orbit.

Altherm Eye Pad.

During the process of manufacture, the heat retaining element is placed within the pad while liquid. After it crystallizes, the orifice through which the element is introduced is permanently sealed by a rubber patch vulcanized over the opening.

The pad is prepared for therapeutic use by placing it in boiling water and boiling it for not more than ten minutes. After this the element will be found to be partially liquefied, and during recrystallization it will give off heat at a comparatively even temperature for approximately forty-five minutes, after which the element will have solidified completely. The temperature will range from approximately 120 down to approximately 110 Fahrenheit. In a clinic acceptable to the Council, these manufacturer's claims were confirmed.

Other tests were made by the firm. After the pad had been boiled from fifteen to twenty minutes and removed from the water, the company found that the temperature would drop rapidly to the point desired for therapeutic use; i. e., 120 F. The company therefore decided to make its instructions read: "Boil for ten minutes, not more."

The company points out that the pads cannot be used until boiled, which automatically sterilizes the pads before each application.

The test made by the manufacturer was repeated by the Council. The pad was boiled for ten minutes and temperature readings were made with an ordinary mercury thermometer, the pad being placed on sand. At the beginning of the test the temperature was 127 F. and after thirty minutes it dropped to 110 F. The pad was boiled ten minutes daily for six days,

after which a second series of readings was made. The initial temperature was 120 F. and after sixty minutes the temperature had dropped to 118 F. The pad was boiled and used daily for six more days and the second series of readings was recorded. The initial temperature was 116 and after sixty minutes the temperature was 112. The observations of the Council agree quite favorably with those recorded by the manufacturer.

The pad does not fit accurately over the orbital margin of all persons, but dry gauze or cotton can be applied under it to adapt it to various orbits. This method of applying heat seems practical and safe; therefore, the Council places the Altherm Eye Pad on its list of accepted devices.

Committee on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

CELLU JUICE-PAK YELLOW CLING PEACHES

Distributor.—The Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Hunt Bros. Packing Company, San Francisco.

Description.—Processed, halved, peeled and stoned yellow cling peaches packed in undiluted juice without added sugar.

Manufacture.—Fully ripened yellow cling stone peaches are halved, pitted, peeled in peeling machines containing hot 1 per cent sodium hydroxide solution, washed with high pressure water sprays to remove peeling and alkali, blanched for one minute in hot water, chilled under pressure sprays, sorted, graded, and placed in cans to which is added undiluted, filtered juice expressed from off-size peaches. The treatment thereafter is essentially the same as for Cellu Juice-Pak Bartlett Pears (THE JOURNAL, Aug. 4, 1934, page 341).

Analysis (submitted by distributor).—

	per cent
Moisture	90.1
Ash	0.4
Fat (ether extract)	0.2
Protein (N × 6.25)	0.3
Reducing sugars as invert sugar	3.4
Sucrose	3.9
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	8.7

Calories.—0.4 per gram; 11 per ounce.

Claims of Manufacturer.—Packed in undiluted peach juice without added sugar.

(1) FAUST BRAND CRYSTAL WHITE SYRUP
(2) FAUST BRAND GOLDEN SYRUP
(3) INDEX BRAND CRYSTAL WHITE SYRUP
(4) INDEX BRAND GOLDEN TABLE SYRUP
(5) MONEY BACK BRAND GOLDEN SYRUP
(6) RED PLUME BRAND CRYSTAL WHITE TABLE SYRUP
(7) PLATO CRYSTAL WHITE TABLE SYRUP
(8) PLATO GOLDEN TABLE SYRUP

Distributors.—(1) and (2) Sentney Wholesale Grocery Company, Hutchinson, Kan. (3) and (4) Elliott Grocery Company, Logansport, Ind. (5) and (6) The C. Callahan Company, La Fayette, Ind. (7) and (8) Union Sales Corporation, Columbus, Ind.

Manufacturer.—Union Starch and Refining Company, Granite City, Ill.

Description.—(1), (3), (6) and (7) Table syrup; corn syrup sweetened with sucrose; flavored with vanilla extract. Same as Silver Drip Brand Crystal White Syrup, THE JOURNAL, June 2, 1934, page 1851.

(2), (4), (5) and (8) Table syrup; corn syrup flavored with refiners' syrup. Same as Golden Drip Brand Golden Table Syrup, THE JOURNAL, May 26, 1934, page 1763.

Claims of Manufacturer.—For table use and as a carbohydrate supplement for milk modification in infant feeding.

CELLU JUICE-PAK ROYAL ANNE CHERRIES

Distributor.—The Chicago Dietetic Supply House, Inc., Chicago.

Packer.—Eugene Fruit Growers Association, Eugene, Ore.

Description.—Processed, pitted or unpitted Royal Anne cherries packed in undiluted juice without added sugar.

Manufacture.—Tree ripened cherries are stemmed under water spray by revolving rolls, graded, water sprayed, sorted according to size and all defective fruit is removed. If not pitted, the fruit is filled into the cans by count. Undiluted juice from off-size cherries is used to fill the cans. The treatment thereafter is essentially the same as for Cellu Juice-Pak Bartlett Pears (THE JOURNAL, Aug. 4, 1934, page 341). If pitted, the fruit is boxed, pitted under a water spray, inspected, filled into cans to a standard weight and canned by the same procedure.

Analysis (submitted by distributor).—

	(pitted), per cent
Moisture	84.7
Ash	0.5
Fat (ether extract)	0.1
Protein (N × 6.25)	0.8
Reducing sugars as invert sugar	12.0
Sucrose	0.1
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	13.7

Calories.—0.6 per gram; 17 per ounce.

Claims of Manufacturer.—Packed in undiluted cherry juice without added sugar.

CALIFORNIA'S PURE PURITAS DRINKING WATER. PURE DISTILLED H_2O

Distributor.—California Consolidated Water Company, Los Angeles.

Description.—Distilled water practically free of microorganisms.

Manufacture.—Well water is run through a boiler operated at 175 C. The water vapor is condensed in double brass pipe condensers. The distillate is bottled in cleaned demijohns as described for Arrowhead Soft Spring Water (THE JOURNAL, July 28, 1934, p. 261).

Analysis (submitted by manufacturer).—

Sanitary Analysis

	Parts per million
Turbidity	none
Color	none
Odor	none
Oxygen consumed	none
Oxygen dissolved	8.9
Free carbon dioxide (CO_2)	3.9
Nitrogen as	
Ammonia nitrogen	none
Albuminoid nitrogen	none
Nitrite nitrogen	none
Nitrate nitrogen	none

Chemical Analysis

Residue on evaporation	2.0
Loss on ignition	1.2
Carbonic acid (H_2CO_3)	2.9
Negative tests for metals and acid radicals	

Micro-Organisms.—Bacterial examination shows the presence of none or very few bacteria per cubic centimeter and no Bacillus coli.

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

ANNUAL PRESENTATION OF EDUCATIONAL DATA FOR 1933-1934 BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Notable developments in the teaching of medicine, no less than in other fields of education, have taken place in the decade and a half since the war. In order to evaluate these changes and consolidate the gains that have been made, the Council on Medical Education and Hospitals determined, in the fall of 1933, to undertake a comprehensive resurvey of the medical schools of the United States and Canada. To increase the effectiveness of this study the cooperation of the Association of American Medical Colleges and the Federation of State Medical Boards was secured. In order that the visitation of medical schools might be completed within a reasonably short time, the Council obtained the services of Dr. Herman G. Weiskotten, dean of the School of Medicine of Syracuse University. The general character of the undertaking is a fact-finding study. It is intended to collect and record such information as is pertinent regarding each institution that is included in the survey. Schools that are not now approved will be visited only on request. The necessary data will be secured partly by correspondence and partly from the personal observation and inquiry of the Council's representative. The purpose of the Council and its allied organizations will be achieved in such measure as faculties and administrative officers contribute their own enthusiastic support to the enterprise.

BLUE PRINT COMMITTEE

While the survey is engaged in finding out what medical education is, the Council is also concerned with what it ought to be. To reappraise the aims and methods of medical teaching, a special committee has been created to act with the Council in the formulation of standards and policies. Its function will be to prepare a plan, or blue print, for the guidance of those who are molding our educational processes. As already announced, its personnel consists of Dr. Reginald Fitz, chairman, Dr. Waller S. Leathers, Dr. Dean Lewis, Dr. Willard C. Rappleye, Dr. Harold Rypins, Rev. Alphonse M. Schwitalla, S.J., and, ex officio, Dr. Ray Lyman Wilbur, chairman of the Council, and Dr. William D. Cutter, secretary.

PREMEDICAL TRAINING

The minimum standard of premedical education for approved schools of medicine was raised from one year of college work to two years, including courses in physics, chemistry and biology, Jan. 1, 1918. In June 1933, for the sake of uniformity, the following statement from the By-Laws[1] of the Association of American Medical Colleges was adopted by the Council as its own premedical standard. In substance it does not differ from the previous requirement of the Council. The organizations interested in the improvement of medical education do not attempt to outline courses that should be taken in the secondary school.

Sec. 4.—Requirements for Admission. Admission to medical schools and medical colleges in membership in the Association may be by:

(1) Satisfactory completion of a minimum of collegiate instruction as provided below in Subsection I; or by

(2) Examination as provided in Subsection II.

Subsection I.[2] The minimum of collegiate credit required for entrance to medical schools and colleges in membership in the Association shall be not less than two full academic years, which shall include English, theoretical and practical courses in physics and biology, and in general and organic chemistry, completed in institutions approved by the accrediting agencies acceptable to the Executive Council of the Association. Exception may be made under this section in that any member may admit applicants who have fulfilled the requirement in American and Canadian institutions not approved by such accrediting agencies, provided that all admissions so made be reported to the Executive Council and shall be published in the next Annual Report of the Council.

All collegiate instruction given in satisfaction of this requirement must be based on the same entrance requirements and must be of the same quality and standard of instruction as that required for a baccalaureate degree in the institution in which the candidate receives his preparation.

Subsection II. Admission to medical schools and medical colleges in the Association may be by examination.

Examinations for the purpose of admission by this method shall be conducted by institutions acceptable to the Executive Council of the Association, under the following conditions:

(*a*) Candidates who have completed two years of collegiate instruction and present evidence of general scholarship of high order, but who lack credits in not more than two of the required subjects, may be admitted on passing examinations in these subjects.

(*b*) Candidates who have completed three years of collegiate instruction and present evidence of having accomplished work

(Continued on page 570)

TABLE 1.—*State Requirements of Premedical Training*

Two Years of College	Effective Date	Two Years of College	Effective Date
Alabama	1919	New Hampshire	1919
Arizona	1922	New Jersey	1921
Arkansas	1922	New Mexico	1922
Colorado	1914	New York	1922
District of Columbia	1929	North Carolina	1922
Florida	1922	North Dakota	1912
Georgia	1922	Oklahoma	1921
Idaho	1938	Oregon	1924
Illinois	1923	Rhode Island	1922
Indiana	1915	South Carolina	1922
Iowa	1915	South Dakota	1915
Kansas	1922	Tennessee	1922
Kentucky	1922	Texas	1930
Louisiana	1922	Utah	1926
Maine	1920	Vermont	1922
Maryland	1922	Virginia	1922
Michigan	1922	Washington	1922
Minnesota	1912	West Virginia	1925
Montana	1922	Wisconsin	1919
Nevada	1922	Wyoming	1922

One Year of College	Effective Date
California	1924
Connecticut	1919
Mississippi	1919
Pennsylvania	1918

High School Graduation or its Equivalent

Delaware
Massachusetts
Missouri
Nebraska
Ohio

1. Constitution and By-Laws of the Association of American Medical Colleges, amended Nov. 15, 1932.

2. Since many schools have admission requirements differing from those given in this section, it is important that intending students of medicine, at an early date, inform themselves as to the exact requirements of that school in which they expect to matriculate.

TABLE 2.—*Statistics of Approved, or Class A, Medical Schools in the United States and Canada*

Marginal No.	Name and Location of School	Premedical Requirement by Years or Semester Hours	Length of Course (Academic Years)	Students by Classes, Session 1933-1934						Graduates since July 1, 1933	Session 1934-1935		Applications for Admission to the 1st Year Will Be Received Until	Executive Officer	Marginal No.
				1st Year	2d Year	3d Year	4th Year	5th Year or Intern Year	Totals		Begins 1934	Ends 1935			
	ALABAMA														
1	University of Alabama School of Medicine, University (Tuscaloosa)	70 s. h.	2	73	51	...	...	...	124	...	Sept. 12	May 28	.....	Stuart Graves, M.D., Dean	1
	ARKANSAS														
2	University of Arkansas School of Medicine, Little Rock	2	4	59	46	45	50	...	200	50	Sept. 19	June 3	Sept.	Frank Vinsonhaler, M.D., Dean	2
	CALIFORNIA														
3	University of California Medical School, Berkeley-San Francisco	3	5	61	56	55	54	56§	226	56	Aug. 20[1]	May 18	April	Langley Porter, M.D., Dean	3
4	College of Medical Evangelists, Loma Linda-Los Angeles	64 s. h.	5	129	94	98	85	90§	406	88	July 2	June 16	May	E. H. Risley, M.D., Dean, Loma Linda; A. E. Coyne, M.D., Dean, Los Angeles	4
5	University of Southern California School of Medicine, Los Angeles	3	5	56	47	33	35	30§	171	30	Sept. 24	June 12	May	Paul S. McKibben, Ph.D., Dean	5
6	Stanford University School of Medicine, San Francisco	3	5	60	53	50	47	41§	210	41	Oct. 2[1]	June 12	March	Loren R. Chandler, M.D., Dean	6
	COLORADO														
7	University of Colorado School of Medicine, Denver	2†	4	58	48	49	51	...	206	51	Sept. 24[1]	June 10	May	Maurice H. Rees, M.D., Dean	7
	CONNECTICUT														
8	Yale University School of Medicine, New Haven	3	4	53	63	49	44	...	209	40	Sept. 24	June 12	Sept.	Milton C. Winternitz, M.D., Dean	8
	DISTRICT OF COLUMBIA														
9	Georgetown University School of Medicine, Washington	3	4	123	147	119	157	...	546	154	Sept. 10	June 10	Sept.	William Gerry Morgan, M.D., Dean	9
10	George Washington University School of Medicine, Washington	2	4	78	71	73	72	...	294	70	Sept. 19	June 1	.....	Earl B. McKinley, M.D., Dean	10
11	Howard University College of Medicine, Washington	2	4	53	46	57	49	...	205	47	Sept. 24	June 7	July	Numa P. G. Adams, M.D., Dean	11
	GEORGIA														
12	Emory University School of Medicine, Atlanta	2	4	64	45	56	60	...	225	60	Oct. 1	June 10	.....	Russell H. Oppenheimer, M.D., Dean	12
13	University of Georgia School of Medicine, Augusta*	2	4	40	35	36	42	...	153	39	Sept. 24	June 10	June	G. Lombard Kelly, M.D., Vice-Dean	13
	ILLINOIS														
14	Loyola University School of Medicine, Chicago	2	5	158	115	88	99	102§	460	89	Sept. 24	June 15	Sept.	Louis D. Moorhead, M.D., Dean	14
15	Northwestern University Medical School, Chicago	3	5	125	119	144	160	146§	548	166	Oct. 2[1]	June 17	May	Irving S. Cutter, M.D., Dean	15
16	University of Chicago, Rush Medical College	3	5	...	...	...	...	148§	328‡	148	Oct. 1[1]	June 11	April	Ernest E. Irons, M.D., Dean	16
17	University of Chicago, The School of Medicine of the Division of the Biological Sciences	3	5	...	...	...	...	19§	325‡	19	Oct. 1[1]	June 12	April	B. C. H. Harvey, M.D., Dean of Med. Students	17
18	University of Illinois College of Medicine, Chicago	2	5	187	165	138	150	148§	640	115	Oct. 1	June 7	July	David J. Davis, M.D., Dean	18
	INDIANA														
19	Indiana University School of Medicine, Bloomington-Indianapolis	2	4	140	107	100	118	...	465	116	Sept. 18	June 17	Feb.	Burton D. Myers, M.D., Dean, Bloomington; Willis D. Gatch, M.D., Dean, Indianapolis	19
	IOWA														
20	State University of Iowa College of Medicine, Iowa City	2	4	102	109	70	72	...	353	72	Sept. 24	June 3	July	John T. McClintock, M.D., Chairman, Administrative Committee	20
	KANSAS														
21	University of Kansas School of Medicine, Lawrence-Kansas City	2	4	84	79	70	67	...	300	68	Sept. 20	June 10	June	H. R. Wahl, M.D., Dean, Kansas City	21
	KENTUCKY														
22	University of Louisville School of Medicine, Louisville	2	4	95	77	81	95	...	348	94	Sept. 13	June 1	May	John Walker Moore, M.D., Dean	22
	LOUISIANA														
23	Louisiana State University Medical Center, New Orleans	2	5	95	42	52	21	28§	210	28	Sept. 19	June 1	July	Arthur Vidrine, M.D., Dean	23
24	Tulane University of Louisiana School of Medicine, New Orleans	2	4	134	107	128	127	...	496	123	Sept. 28	June 12	.....	Charles C. Bass, M.D., Dean	24
	MARYLAND														
25	Johns Hopkins University School of Medicine, Baltimore	Degree	4	72	68	70	74	...	284	73	Oct. 2	June 11	June	Alan M. Chesney, M.D., Dean	25
26	University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore	2	4	137	96	106	105	...	444	103	Sept. 21	June 1	.....	J. M. H. Rowland, M.D., Dean	26
	MASSACHUSETTS														
27	Boston University School of Medicine, Boston	3	4	70	65	58	53	...	246	53	Sept. 20	June 10	May	Alexander S. Begg, M.D., Dean	27
28	Harvard University Medical School, Boston	Degree	4	125	122	139	130	...	516	132	Sept. 24	June 20	March	David L. Edsall, M.D., Dean	28
29	Tufts College Medical School, Boston	Degree	4	130	120	116	102	...	468	101	Sept. 26	June 17	April	A. Warren Stearns, M.D., Dean	29
	MICHIGAN														
30	University of Michigan Medical School, Ann Arbor	90 s. h.	4	119	121	108	103	...	451	98	Sept. 24[1]	June 17	March	F. G. Novy, M.D., Dean	30
31	Wayne University College of Medicine, Detroit	90 s. h.	5	90	92	73	69	72§	324	66	Sept. 27	June 21	.....	W. H. MacCracken, M.D., Dean	31
	MINNESOTA														
32	University of Minnesota Medical School, Minneapolis	2	5	148	141	117	108	146§	514	114	Oct. 1[1]	June 17	June	Elias P. Lyon, Ph.D., Dean	32
	MISSISSIPPI														
33	University of Mississippi School of Medicine, University*	2†	2	28	23	...	...	...	51	...	Sept. 21	June 3	.....	P. L. Mull, M.D., Dean	33
	MISSOURI														
34	University of Missouri School of Medicine, Columbia	90 s. h.	2	40	40	...	...	...	80	...	Sept. 10	June 5	August	Dudley S. Conley, M.D., Dean	34
35	St. Louis University School of Medicine, St. Louis	2	4	166	126	114	112	...	518	108	Sept. 19	June 1	March	Alphonse M. Schwitalla, S.J., Ph.D., Dean	35
36	Washington University School of Medicine, St. Louis	4	4	85	72	95	91	...	343	91	Sept. 27	June 11	Sept.	W. McKim Marriott, M.D., Dean	36
	NEBRASKA														
37	Creighton University School of Medicine, Omaha	2	4	84	76	71	67	...	298	69	Sept. 20	June 6	.....	Bryan M. Riley, M.D., Dean	37
38	University of Nebraska College of Medicine, Omaha	65 s. h.	4	99	79	77	85	...	340	85	Sept. 24	June 10	.....	C. W. M. Poynter, M.D., Dean	38
	NEW HAMPSHIRE														
39	Dartmouth Medical School, Hanover	3	2	21	20	...	...	...	41	...	Sept. 20	June 18	.....	John Pollard Bowler, M.D., Dean	39
	NEW YORK														
40	Albany Medical College, Albany	3	4	34	25	30	20	...	109	20	Sept. 24	June 10	July	Thomas Ordway, M.D., Dean	40
41	Long Island College of Medicine, Brooklyn	72 s. h.	4	107	112	99	113	...	431	111	Oct. 1	June 4	.....	Adam M. Miller, A.M., Dean	41
42	University of Buffalo School of Medicine, Buffalo	2	4	77	72	68	67	...	284	63	Oct. 1	June 12	Sept.	Edward W. Koch, M.D., Dean	42

43	Columbia University College of Physicians and Surgeons, New York	3	4	112	105	99	98	...	414	99	Sept. 26	June 4	April	Willard C. Rappleye, M.D., Dean	43
44	Cornell University Medical College, Ithaca-New York	3 & Degree	4	85	61	70	55	...	271	56	Sept. 24	June 6	March	G. Canby Robinson, M.D., Director, New York	44
45	New York Homeopathic Medical College and Flower Hospital, New York	2	4	97	87	70	72	...	326	72	Sept. 17	June 4	.....	Claude A. Burrett, M.D., Dean	45
46	New York University, University and Bellevue Hospital Medical College, New York	3 & Degree	4	158	118	134	112	...	522	108	Sept. 12	June 12	March	John Wyckoff, M.D., Dean	46
47	University of Rochester School of Medicine	3	4	46	44	46	45	...	181	46	Sept. 17	June 17	May	George Hoyt Whipple, M.D., Dean	47
48	Syracuse University College of Medicine, Syracuse	2	4	50	51	48	52	...	201	52	Sept. 27	June 3	May	H. G. Weiskotten, M.D., Dean	48
	NORTH CAROLINA														
49	University of North Carolina School of Medicine, Chapel Hill	2	2	34	32	...	...	...	66	...	Sept. 20	June 11	.....	C. S. Mangum, M.D., Dean	49
50	Duke University School of Medicine, Durham	70 s. h.	6	...	...	...	...	...	193‡	33	Oct. 1	Aug. 31	July	Wilburt C. Davison, M.D., Dean	50
51	Wake Forest College School of Medicine, Wake Forest	60 s. h.	2	35	27	...	...	...	62	...	Sept. 11	May 30	May	Thurman D. Kitchin, M.D., Dean	51
	NORTH DAKOTA														
52	University of North Dakota School of Medicine, Grand Forks	2†	2	42	27	...	...	...	69	...	Sept. 18	June 11	Sept.	H. E. French, M.D., Dean	52
	OHIO														
53	University of Cincinnati College of Medicine, Cincinnati	2†	5	90	77	68	74	72§	309	71	Sept. 24	June 7	Feb.	Arthur C. Bachmeyer, M.D., Dean; Alfred Friedlander, M.D. will assume deanship Sept. 15.	53
54	Western Reserve University School of Medicine, Cleveland	3	4	81	65	71	56	...	273	53	Sept. 13	June 12	Sept.	Torald Sollmann, M.D., Dean	54
55	Ohio State University College of Medicine, Columbus	2†	4	101	89	85	89	...	364	88	Oct. 2	June 10	June	J. H. J. Upham, M.D., Dean	55
	OKLAHOMA														
56	University of Oklahoma School of Medicine, Oklahoma City	2	4	65	61	56	61	...	243	61	Sept. 17	June 3	July	Lewis Jefferson Moorman, M.D., Dean	56
	OREGON														
57	University of Oregon Medical School, Portland	3	4	64	61	53	52	...	230	56	Oct 3	June 17	July	Richard B. Dillehunt, M.D., Dean	57
	PENNSYLVANIA														
58	Hahnemann Medical College and Hospital of Philadelphia	2	4	155	117	103	95	...	470	95	Oct. 1	June 13	.....	William A. Pearson, Ph.C., Dean	58
59	Jefferson Medical College of Philadelphia	Degree	4	158	124	142	143	...	567	143	Sept. 24	June 7	.....	Ross V. Patterson, M.D., Dean	59
60	Temple University School of Medicine, Philadelphia	3	4	113	117	109	118	...	457	118	Sept. 26	June 13	October	William N. Parkinson, M.D., Dean	60
61	University of Pennsylvania School of Medicine, Philadelphia	3	4	130	123	138	133	...	524	133	Sept. 24	June 19	April	William Pepper, M.D., Dean	61
62	Woman's Medical College of Pennsylvania, Philadelphia	2	4	30	38	36	18	...	122	19	Sept. 26	June 12	Sept.	Martha Tracy, M.D., Dean	62
63	University of Pittsburgh School of Medicine, Pittsburgh	2	4	87	65	66	65	...	263	65	Sept. 24	June 5	May	R. R. Huggins, M.D., Dean	63
	SOUTH CAROLINA														
64	Medical College of the State of South Carolina, Charleston	2	4	42	42	42	33	...	159	31	Sept. 27	June 6	July	Robert Wilson, M.D., Dean	64
	SOUTH DAKOTA														
65	University of South Dakota School of Medicine, Vermilion	2	2	30	27	...	...	...	57	...	Sept. 19	June 10	August	Joseph C. Ohlmacher, M.D., Dean	65
	TENNESSEE														
66	University of Tennessee College of Medicine, Memphis	2	4	146	110	69	87	...	412	86	July 11[1]	June 8	.....	O. W. Hyman, Ph.D., Dean	66
67	Meharry Medical College, Nashville	2	4	45	49	44	40	...	178	38	Oct. 1	May 30	October	John J. Mullowney, M.D., President	67
68	Vanderbilt University School of Medicine, Nashville	3 & Degree	4	49	45	50	50	...	194	50	Sept. 26	June 12	May	Waller S. Leathers, M.D., Dean	68
	TEXAS														
69	Baylor University College of Medicine, Dallas	2	4	124	91	81	64	...	360	64	Oct. 1	May 27	Sept.	Walter H. Moursund, M.D., Dean	69
70	University of Texas School of Medicine, Galveston	2	4	111	86	83	70	...	350	70	Oct. 1	May 31	July	George E. Bethel, M.D., Dean	70
	UTAH														
71	University of Utah School of Medicine, Salt Lake City	3	2	34	36	...	...	...	70	...	Sept. 24	June 1	April	L. L. Daines, M.D., Dean	71
	VERMONT														
72	University of Vermont College of Medicine, Burlington	72 s. h.	4	57	43	37	33	...	170	33	Sept. 21	June 24	Sept.	James N. Jenne, M.D., Dean	72
	VIRGINIA														
73	University of Virginia Department of Medicine, Charlottesville	2	4	71	54	54	57	...	236	52	Sept. 13	June 11	July	J. Carroll Flippin, M.D., Dean	73
74	Medical College of Virginia, Richmond	2	4	92	66	86	95	...	339	93	Sept. 11	May 28	.....	Lee E. Sutton Jr., M.D., Dean	74
	WEST VIRGINIA														
75	West Virginia University School of Medicine, Morgantown	66 s. h.	2	83	55	...	...	...	138	...	Sept. 17	June 11	Sept.	John N. Simpson, M.D., Dean	75
	WISCONSIN														
76	University of Wisconsin Medical School, Madison	2	4	103	110	54	50	...	317	49	Sept. 19	June 17	Sept.	C. R. Bardeen, M.D., Dean	76
77	Marquette University School of Medicine, Milwaukee	64 s. h.	5	98	76	62	66	54§	302	53	Oct. 1	June 12	.....	Eben J. Carey, M.D., Dean	77
	CANADA														
78	University of Alberta Faculty of Medicine, Edmonton, Alta	..	6	19	47	35	25	30#	180	24	Sept. 27	May 15	Sept.	Allan C. Rankin, M.D., Dean	78
79	University of Manitoba Faculty of Medicine, Winnipeg, Man	2	5	54	38	53	53	70§	198	72	Sept. 21	May 26	.....	A. T. Mathers, M.D., Dean	79
80	Dalhousie University Faculty of Medicine, Halifax, N. S.	2	5	55	40	30	23	33§	148	32	Sept. 11	May 14	.....	H. G. Grant, M.D., Dean	80
81	Queen's University Faculty of Medicine, Kingston, Ont	..	6	53	58	48	44	48#	296	44	Sept. 27	May 22	Sept.	Frederick Etherington, M.D., Dean	81
82	University of Western Ontario Medical School, London, Ont	2	4	49	32	33	25	...	139	24	Sept. 26	June 5	Sept.	A. B. Macallum, M.D., Dean	82
83	University of Toronto Faculty of Medicine, Toronto, Ont	..	6	138	154	145	138	112#	794	106	Sept. 25	May 18	Sept.	J. G. FitzGerald, M.D., Dean	83
84	McGill University Faculty of Medicine, Montreal, Que	3	5	97	100	100	111	83	491	80	Sept. 19	April 30	May	Charles F. Martin, M.D., Dean	84
85	University of Montreal Faculty of Medicine, Montreal, Que	1	5	45	62	39	40	51§	186	51	Sept. 15	June 15	August	Télesphore Parizeau, M.D., Dean	85
86	Laval University Faculty of Medicine, Quebec, Que	1	5	87	42	46	41	47	263	43	Sept. 11	May 31	August	Calixte Dagneau, M.D., Dean	86
87	University of Saskatchewan School of Medical Sciences, Saskatoon, Sask.	2	2	25	22	...	...	...	47	...	Sept. 21	May 10	August	W. S. Lindsay, M.B., Dean	87

* Note.—Action of the Council on Medical Education and Hospitals, Feb. 11, 1934: Resolved, That approval of the University of Georgia School of Medicine be withdrawn at this time with the provision that this decision will not prejudice the transfer of the students now enrolled to Class A medical schools at the end of the college session.

Action of the Council, June 10, 1934: Resolved, That in the resolution adopted in February 1934 the provision regarding transfer of students be amended so as to include those enrolled for the session of 1934-1935.

Note.—Action of the Council on Medical Education and Hospitals, Sept. 22, 1933: Resolved, That the University of Mississippi School of Medicine be placed on probation until July 1, 1934, and that the freshmen enrolled for the session 1933-1934 be recognized.

† Three-year premedical requirement for the session 1934-1935.

‡ Enrolment not on above table by classes for the two medical schools of the University of Chicago and Duke University.

§ Fifth year (internship) enrolment not included in the total column.

Sixth year enrolment: Alberta, 24; Queen's, 45; Toronto, 107.

1. Students admitted at different times of the year: Northwestern, March and June; Michigan, February 11; Minnesota, January 7; Tennessee, September 27, 1934, January 2 and March 21, 1935. Students admitted to advanced standing: California, January 14; Stanford, January 5; Colorado, January 2 and March 25; Rush, April 1; Division of the Biological Sciences, beginning of each quarter.

TABLE 3.—*Home States*

Marginal Number	Name of School	1 Alabama 211	2 Arizona 42	3 Arkansas 199	4 California 971	5 Colorado 194	6 Connecticut 350	7 Delaware 43	8 Dist. of Columbia 200	9 Florida 134	10 Georgia 342	11 Idaho 48	12 Illinois 1,548	13 Indiana 569	14 Iowa 460	15 Kansas 342	16 Kentucky 341	17 Louisiana 263	18 Maine 124	19 Maryland 351	20 Massachusetts 870	Marginal Number
1	University of Alabama School of Medicine	58	..	..	4	..	3	..	..	4	1	..	..	..	..	1	2	..	..	..	3	1
2	University of Arkansas School of Medicine	..	1	158	1	..	..	..	..	1	..	..	3	7	..	4	..	..	..	..	..	2
3	University of California Medical School	..	..	..	224	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
4	College of Medical Evangelists	..	1	1	87	11	1	..	4	2	3	4	6	8	8	7	1	..	2	13	9	4
5	University of Southern California School of Medicine	..	3	..	163	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
6	Stanford University School of Medicine	..	5	..	168	1	..	..	1	..	..	..	..	1	1	..	..	..	..	..	..	6
7	University of Colorado School of Medicine	2	..	..	7	150	..	..	..	1	..	1	1	2	1	..	..	..	..	..	1	7
8	Yale University School of Medicine	..	..	..	..	1	63	..	..	2	..	..	4	1	..	1	2	..	6	2	20	8
9	Georgetown University School of Medicine	..	..	..	5	1	24	4	43	..	..	1	..	2	1	..	..	..	8	6	35	9
10	George Washington University School of Medicine	..	4	..	6	..	8	..	97	..	2	2	3	3	3	..	1	..	4	15	6	10
11	Howard University School of Medicine	4	1	1	..	..	3	..	16	8	9	..	1	..	..	2	3	..	..	5	2	11
12	Emory University School of Medicine	12	1	1	..	..	1	..	..	16	122	..	..	..	..	1	3	2	..	..	..	12
13	University of Georgia School of Medicine	..	..	..	..	..	..	..	..	..	151	..	..	..	..	..	..	..	..	..	..	13
14	Loyola University School of Medicine	..	..	1	6	2	2	..	..	1	..	..	274	12	..	..	1	..	1	..	3	14
15	Northwestern University Medical School	1	4	1	18	2	1	..	..	1	..	7	219	19	16	18	1	..	..	..	..	15
16	Rush Medical College	6	..	..	5	1	2	..	1	3	2	3	74	10	5	1	4	..	..	..	7	16
17	School of Medicine of the Div. of Biological Sciences	1	1	..	5	1	1	..	1	2	1	2	156	11	7	3	2	1	..	1	5	17
18	University of Illinois College of Medicine	..	..	..	..	..	..	..	..	..	..	..	640	..	..	..	..	..	..	..	..	18
19	Indiana University School of Medicine	..	..	..	..	..	..	..	..	1	..	..	2	445	..	..	..	..	..	..	..	19
20	State University of Iowa College of Medicine	..	..	..	..	..	..	..	..	..	..	..	3	..	345	..	1	..	..	..	..	20
21	University of Kansas School of Medicine	..	1	..	..	..	..	..	..	..	..	..	1	..	..	249	..	..	..	..	..	21
22	University of Louisville School of Medicine	1	..	..	1	..	2	..	..	1	..	..	4	15	2	..	206	..	..	..	..	22
23	Louisiana State University Medical Center	9	..	1	1	..	..	1	1	3	1	..	1	..	3	1	..	127	..	..	1	23
24	Tulane University of Louisiana School of Medicine	51	5	23	1	2	..	..	2	40	11	..	3	..	1	1	10	143	..	..	1	24
25	Johns Hopkins University School of Medicine	3	..	5	10	..	4	1	9	4	6	1	8	6	2	..	4	..	1	61	6	25
26	University of Maryland Sch. of Med. and Coll. of P. & S.	..	..	..	2	..	11	2	2	..	1	..	..	..	..	..	..	..	3	220	7	26
27	Boston University School of Medicine	..	..	..	..	..	10	..	..	..	..	..	..	..	1	..	..	..	14	..	135	27
28	Harvard University Medical School	6	1	..	13	4	25	..	1	3	4	5	9	5	4	4	5	..	13	2	135	28
29	Tufts College Medical School	..	..	..	1	..	58	..	..	..	..	..	..	..	..	..	..	..	26	..	306	29
30	University of Michigan Medical School	..	..	..	5	1	1	..	..	..	1	..	2	3	1	..	3	..	1	1	10	30
31	Wayne University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31
32	University of Minnesota Medical School	..	..	..	1	..	..	..	..	..	..	..	2	..	4	2	..	..	..	..	..	32
33	University of Mississippi School of Medicine	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33
34	University of Missouri School of Medicine	..	..	..	3	..	..	..	..	..	..	..	3	..	..	1	..	..	..	..	..	34
35	St. Louis University School of Medicine	1	2	..	24	2	4	..	..	..	1	1	37	12	2	9	4	..	..	..	4	35
36	Washington University School of Medicine	5	2	3	24	3	..	..	..	1	..	4	37	10	4	12	1	..	..	..	3	36
37	Creighton University School of Medicine	..	1	1	60	2	2	..	1	..	..	..	4	3	23	4	..	..	..	..	1	37
38	University of Nebraska College of Medicine	..	..	..	1	1	..	..	..	..	..	1	2	..	10	1	..	..	..	..	..	38
39	Dartmouth Medical School	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	10	39
40	Albany Medical College	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	40
41	Long Island College of Medicine	..	..	..	1	..	16	1	..	..	..	..	..	..	..	..	..	..	..	..	5	41
42	University of Buffalo School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42
43	Columbia University College of Physicians and Surgeons	..	..	1	6	1	26	..	1	1	1	..	2	1	..	..	..	1	4	2	17	43
44	Cornell University Medical College	1	..	..	5	2	8	..	1	1	2	1	..	..	..	4	2	1	..	..	8	44
45	New York Homeopathic Med. College and Flower Hosp.	..	..	..	2	..	2	..	1	1	..	..	..	2	..	..	..	..	..	..	3	45
46	New York Univ., Univ. and Bellevue Hosp. Medical Coll.	1	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	3	46
47	University of Rochester School of Medicine	..	..	..	5	..	8	..	..	..	1	1	2	..	..	..	..	..	1	1	8	47
48	Syracuse University College of Medicine	..	..	..	..	..	4	..	..	..	..	..	4	..	..	..	..	..	1	..	1	48
49	University of North Carolina School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	49
50	Duke University School of Medicine	2	..	1	2	..	1	1	1	2	3	1	2	2	3	1	3	1	..	6	2	50
51	Wake Forest College School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51
52	University of North Dakota School of Medicine	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	52
53	University of Cincinnati College of Medicine	..	..	..	1	..	..	..	..	1	..	..	..	4	..	..	27	..	..	..	..	53
54	Western Reserve University School of Medicine	1	..	..	3	..	..	1	..	..	..	..	1	..	..	..	1	..	..	..	..	54
55	Ohio State University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55
56	University of Oklahoma School of Medicine	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56
57	University of Oregon Medical School	..	..	..	1	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	57
58	Hahnemann Medical College and Hosp. of Philadelphia	..	2	..	2	..	7	9	2	3	..	..	1	5	..	..	1	..	1	..	3	58
59	Jefferson Medical College of Philadelphia	..	1	..	8	1	9	13	1	1	..	..	..	1	..	1	..	..	8	1	4	59
60	Temple University School of Medicine	..	..	..	2	..	1	..	..	4	..	..	1	..	1	..	..	..	..	2	3	60
61	University of Pennsylvania School of Medicine	7	3	..	5	..	3	5	1	3	..	1	..	3	1	6	3	..	4	2	2	61
62	Woman's Medical College of Pennsylvania	..	..	..	4	1	1	..	1	1	..	..	1	..	1	..	1	..	..	2	8	62
63	University of Pittsburgh School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	63
64	Medical College of the State of South Carolina	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	1	..	..	..	..	64
65	University of South Dakota School of Medicine	..	..	..	4	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	65
66	University of Tennessee College of Medicine	17	..	10	1	..	..	..	..	6	2	..	7	..	..	2	16	..	..	..	..	66
67	Meharry Medical College	3	..	8	4	..	..	..	7	6	8	..	4	..	..	2	3	12	..	2	1	67
68	Vanderbilt University School of Medicine	15	1	2	2	..	..	..	..	1	7	..	4	1	..	..	24	..	..	1	4	68
69	Baylor University College of Medicine	1	2	..	9	2	1	..	..	..	..	..	2	1	1	4	..	5	..	..	1	69
70	University of Texas School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70
71	University of Utah School of Medicine	..	..	..	..	..	..	..	1	..	..	5	..	..	..	..	..	..	..	..	..	71
72	University of Vermont College of Medicine	..	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	10	..	22	72
73	University of Virginia Department of Medicine	..	..	..	..	..	2	4	1	5	2	..	..	..	..	..	2	..	..	2	2	73
74	Medical College of Virginia	1	..	..	5	..	4	1	2	2	..	..	..	..	..	..	2	..	..	2	..	74
75	West Virginia University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75
76	University of Wisconsin Medical School	..	..	..	1	..	1	..	..	..	..	..	9	1	..	..	..	..	..	..	2	76
77	Marquette University School of Medicine	..	..	..	5	1	2	..	..	..	..	..	3	3	3	..	..	..	..	..	2	77
78	University of Alberta Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	78
79	University of Manitoba Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79
80	Dalhousie University Faculty of Medicine	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	80
81	Queen's University Faculty of Medicine	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	81
82	University of Western Ontario Medical School	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	82
83	University of Toronto Faculty of Medicine	..	..	..	1	1	..	..	1	..	..	..	..	..	1	..	..	..	..	..	1	83
84	McGill University Faculty of Medicine	..	..	..	44	..	6	..	..	..	..	..	5	..	1	..	..	..	10	2	24	84
85	University of Montreal Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	8	85
86	Laval University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	86
87	University of Saskatchewan School of Medical Sciences	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

of Medical Students

Marginal Number	Michigan.....899	Minnesota.....328	Mississippi.....195	Missouri.....497	Montana.....65	Nebraska.....430	Nevada.....16	New Hampshire.....73	New Jersey.....943	New Mexico.....31	New York.....3,413	North Carolina.....365	North Dakota.....131	Ohio.....1,346	Oklahoma.....311	Oregon.....216	Pennsylvania.....2,162	Rhode Island.....165	South Carolina.....205	South Dakota.....105	Tennessee.....383	Texas.....801	Utah.....156	Vermont.....118	Virginia.....460	Washington.....211	West Virginia.....300	Wisconsin.....632	Wyoming.....14	U. S. Possessions.108	Foreign.....2,690	Totals.....25,541	Marginal Number
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
1	1	..	1	1	..	..	..	1	10	1	13	1	..	6	..	..	12	..	..	..	..	..	..	..	..	..	..	1	..	..	..	124	1
2	..	..	..	5	..	..	..	..	5	..	14	..	..	1	5	..	3	..	..	..	1	9	..	..	..	..	1	..	..	..	1	200	2
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	226	3
4	18	10	3	3	3	7	2	..	8	2	17	..	4	10	7	7	11	3	..	5	8	7	1	..	2	23	..	10	1	6	60	406	4
5	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	171	5
6	2	2	..	1	..	2	1	1	2	1	..	1	..	1	..	1	..	..	..	..	..	2	1	..	..	8	..	1	..	3	3	210	6
7	1	..	..	2	1	4	1	..	1	3	9	..	1	3	1	..	2	1	..	1	..	1	6	..	..	1	..	..	1	..	..	206	7
8	1	2	..	3	..	2	..	1	16	..	49	..	..	9	..	1	9	8	..	..	..	1	1	..	..	3	..	..	..	1	..	209	8
9	5	..	..	1	1	..	..	..	85	..	141	1	1	21	..	..	101	35	..	..	..	..	..	3	6	..	2	..	1	9	3	546	9
10	5	1	..	..	1	1	1	..	24	1	50	1	1	4	..	..	16	..	1	1	..	..	9	1	5	3	2	..	..	8	4	204	10
11	..	..	2	4	..	..	..	..	13	..	12	15	..	1	1	..	16	1	4	..	..	3	..	..	22	..	2	..	..	..	54	205	11
12	..	..	15	1	..	1	..	..	..	..	5	13	..	8	..	..	1	..	8	..	2	2	..	..	3	..	3	..	..	..	4	225	12
13	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	153	13
14	18	3	..	1	3	3	..	..	9	..	48	..	2	29	..	..	18	2	..	1	..	1	..	..	..	2	2	6	..	4	5	460	14
15	26	11	..	7	9	13	1	..	4	4	4	6	13	8	4	3	2	..	..	8	1	3	20	..	1	40	3	40	..	4	5	548	15
16	17	5	1	8	2	..	..	..	6	1	38	2	16	15	2	..	6	..	..	11	..	4	9	..	..	6	18	29	..	3	5	328	16
17	14	5	..	2	4	2	1	1	13	..	32	..	4	8	..	2	3	..	..	2	..	3	1	..	1	7	..	13	1	1	4	325	17
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	640	18
19	..	..	..	..	..	..	..	..	8	..	5	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	465	19
20	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	353	20
21	..	1	..	41	2	..	..	..	..	1	1	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	300	21
22	3	2	2	16	1	..	..	..	7	..	18	..	2	29	..	..	5	..	..	1	..	..	6	..	..	1	15	6	..	2	..	348	22
23	1	1	10	1	..	..	..	..	1	..	8	5	..	..	2	..	3	1	..	1	..	16	1	..	..	..	3	..	..	3	3	210	23
24	..	..	57	5	2	..	..	..	1	..	13	13	..	1	5	..	1	..	4	..	4	66	1	..	1	..	..	..	..	..	28	496	24
25	5	5	1	2	1	1	1	1	15	1	39	4	1	15	3	1	22	1	2	..	5	2	..	..	11	1	5	3	..	..	5	284	25
26	2	..	..	..	..	..	..	..	38	..	63	16	..	1	..	..	49	3	..	1	1	3	..	..	4	..	12	1	..	2	..	444	26
27	3	1	..	..	..	..	..	6	7	..	48	..	..	3	..	..	3	12	..	1	..	..	..	..	..	..	..	..	..	..	2	246	27
28	6	6	2	19	1	3	3	6	34	3	58	9	2	25	1	1	24	10	..	..	2	7	7	3	9	15	2	10	..	3	6	516	28
29	..	..	..	..	..	..	..	16	2	1	14	..	2	1	..	2	1	31	..	..	..	..	..	2	..	..	..	1	..	3	1	468	29
30	281	2	..	..	1	..	..	..	23	..	41	..	1	33	2	..	18	1	1	..	..	..	1	..	2	..	..	2	..	4	9	451	30
31	309	..	..	..	..	..	..	..	..	..	2	..	..	10	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	324	31
32	1	438	..	..	10	2	..	..	..	..	6	..	14	..	1	..	..	..	..	13	..	..	1	..	..	3	..	10	..	4	2	514	32
33	..	..	44	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	33
34	..	1	..	66	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	1	..	..	1	..	..	..	..	..	..	1	80	34
35	7	6	..	109	5	2	1	2	24	..	90	..	1	92	3	1	41	5	..	..	..	5	3	1	1	8	1	2	..	..	5	518	35
36	1	1	..	153	2	..	..	..	3	..	17	2	2	8	3	3	5	..	..	1	3	7	2	..	..	7	5	6	1	2	..	343	36
37	1	4	..	6	7	77	1	..	5	1	46	..	..	6	..	5	6	..	..	9	..	1	1	2	..	11	..	1	2	4	..	298	37
38	1	1	..	6	1	301	..	..	..	..	1	..	1	..	..	..	..	..	..	4	..	..	1	..	..	..	..	..	6	1	..	340	38
39	..	..	..	..	..	..	..	6	5	..	12	..	..	3	..	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..	..	41	39
40	..	..	..	..	..	..	..	..	2	..	99	..	..	1	..	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	..	109	40
41	..	1	..	..	..	..	..	..	37	..	339	1	..	..	2	..	2	2	..	..	..	..	..	..	1	..	..	..	..	3	..	431	41
42	1	..	..	..	..	..	..	..	4	..	265	..	..	3	..	..	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	284	42
43	2	1	..	..	..	..	..	2	65	..	253	..	..	3	..	..	3	5	2	..	..	..	2	..	..	2	2	2	..	2	4	414	43
44	3	3	..	..	..	..	..	..	39	1	149	2	..	7	1	..	15	4	1	..	..	..	1	1	..	1	5	1	..	..	1	271	44
45	3	..	..	..	..	..	..	..	39	..	254	..	..	12	..	..	4	1	..	..	..	1	..	..	..	1	..	..	..	..	..	326	45
46	..	..	..	..	..	..	..	..	43	..	447	5	..	3	1	..	10	1	..	..	..	..	..	..	..	..	3	..	..	..	..	522	46
47	2	..	..	..	..	..	..	..	10	..	104	..	..	19	..	1	7	1	..	..	..	..	..	3	1	1	1	2	..	1	1	181	47
48	1	..	..	..	..	..	..	1	11	..	169	3	..	1	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	1	..	201	48
49	..	..	..	..	..	..	..	..	1	..	4	58	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	66	49
50	1	1	1	1	..	1	..	..	12	..	33	36	1	4	2	3	17	2	9	..	4	5	1	1	7	2	4	2	..	..	9	193	50
51	..	..	..	..	..	..	..	..	2	..	1	52	..	..	..	..	1	..	2	..	1	..	..	..	3	..	..	..	..	..	..	62	51
52	5	..	5	..	1	..	..	..	..	..	..	..	59	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..	..	69	52
53	..	..	..	..	..	..	..	..	..	..	7	..	..	263	..	..	2	..	..	..	1	..	..	..	..	..	2	..	..	..	1	309	53
54	8	..	..	1	..	..	..	..	3	..	4	..	..	211	..	1	25	..	..	..	..	..	..	..	1	2	4	2	..	1	3	273	54
55	..	..	..	..	..	..	..	..	..	..	..	..	..	364	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	364	55
56	..	..	..	..	..	..	..	..	..	..	..	..	..	..	239	..	1	..	..	..	2	..	..	..	..	..	..	..	..	..	..	243	56
57	..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	178	..	..	..	..	..	..	1	..	..	41	..	1	..	..	..	230	57
58	2	..	1	1	..	..	..	1	84	..	28	..	..	10	..	..	293	3	..	..	..	..	1	..	1	..	1	..	..	5	3	470	58
59	2	..	1	1	..	..	..	1	73	..	24	15	..	30	1	3	328	12	2	..	2	1	..	..	3	2	9	..	..	7	1	567	59
60	1	..	1	..	..	..	..	..	40	..	12	9	..	3	..	..	370	1	1	..	..	..	..	..	..	..	..	..	..	5	..	457	60
61	1	..	1	5	1	1	..	2	48	..	21	24	1	9	1	..	315	..	2	..	4	5	9	..	4	4	7	3	..	3	4	524	61
62	2	..	..	1	..	..	..	..	7	..	31	1	..	7	1	1	45	2	..	..	..	..	..	..	..	..	..	1	..	..	2	122	62
63	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	262	..	..	..	..	..	..	..	..	..	..	..	..	..	1	263	63
64	..	..	1	..	..	..	..	..	2	..	3	7	..	..	..	..	1	..	142	..	..	..	..	..	..	..	..	..	..	..	..	159	64
65	..	..	..	..	..	2	..	..	..	..	3	..	..	..	..	..	2	..	..	41	..	..	..	..	..	..	..	..	..	1	..	57	65
66	..	..	32	7	..	..	..	..	..	1	4	3	..	2	12	..	..	..	1	2	276	6	..	..	3	..	2	..	..	..	..	412	66
67	3	..	5	2	..	1	..	..	7	..	2	15	..	4	..	..	6	..	7	..	10	4	..	..	19	..	6	..	..	..	27	178	67
68	5	..	12	2	..	..	..	..	2	..	9	3	..	8	1	..	4	1	6	..	56	10	..	..	3	1	6	1	..	1	1	194	68
69	1	..	1	9	..	2	..	..	..	4	18	..	..	2	8	..	2	..	1	..	1	272	..	..	..	2	1	1	..	..	6	360	69
70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	350	..	..	..	..	..	..	..	..	..	350	70
71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	64	..	..	..	..	..	..	..	..	70	71
72	..	..	..	..	..	..	..	2	5	..	20	..	..	1	..	..	1	..	..	..	..	..	..	95	..	..	..	..	..	..	1	170	72
73	..	..	1	..	..	..	..	..	7	..	5	6	..	..	..	..	1	..	5	..	2	1	..	..	171	1	16	..	..	..	..	236	73
74	2	..	1	..	..	..	..	1	7	..	20	31	..	5	..	..	12	..	3	..	..	..	..	..	172	..	55	1	..	7	3	339	74
75	..	..	..	..	..	..	..	..	1	..	13	..	..	5	..	..	16	..	..	..	..	..	..	..	..	..	99	..	..	3	1	138	75
76	..	..	..	2	1	..	..	1	1	..	5	1	..	3	..	..	1	1	..	..	..	..	..	..	..	..	..	285	..	..	2	317	76
77	29	11	..	..	..	..	..	..	4	..	22	..	..	9	..	1	4	1	..	1	..	..	1	..	..	..	..	204	..	..	2	302	77
78	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	179	180	78
79	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	197	198	79
80	..	..	..	..	..	..	..	..	7	..	29	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	107	148	80
81	..	..	..	..	..	..	..	1	2	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	278	296	81
82	2	..	..	1	..	..	..	..	2	..	9	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	121	139	82
83	3	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	785	794	83
84	6	2	..	1	2	2	1	18	7	..	52	2	..	1	..	1	8	8	..	..	..	1	..	3	1	10	..	3	..	..	270	491	84
85	1	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	3	..	..	..	..	..	1	1	..	..	..	..	..	166	186	85
86	..	..	..	..	..	..	..	2	..	..	4	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	253	263	86
87	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47	47	87
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

(Continued from page 565)

of distinction in one or more fields of learning, but who lack credit in any or all of the required subjects, may be admitted on passing examinations in these subjects.

At the present time, thirty-seven of the seventy-seven approved medical schools in the United States have adopted admission requirements in excess of this minimum; four require a college degree, while three admit students with three years of college work with the stipulation that the baccalaureate be conferred at the end of the first year of medicine. The medical schools of Canada vary with regard to the premedical requirement. Four have a two year requirement, two require one year, one requires three years, and three schools have a six year medical course including premedical subjects.

Since 1915 the Council has published annually a list of approved colleges of arts and sciences as a guide to medical schools in the selection of students. This list was a compilation of those colleges approved by the following agencies:

Association of American Universities.
Middle States Association of Colleges and Secondary Schools.
New England Association of Colleges and Secondary Schools.
North Central Association of Colleges and Secondary Schools.
Northwest Association of Secondary and Higher Schools.
Southern Association of Colleges and Secondary Schools.

In 1932 this list was discontinued, because the same information was being distributed by the Office of Education in the Department of the Interior at Washington. The data, included in their publications, however, proved to be not readily accessible and the Council has therefore deemed it advisable to resume the publication of its own list. A new edition will be available in October. The Association of American Medical Colleges endorses the lists of evaluating agencies included in the Council's publication but in addition recognizes also the colleges approved by a state university. The constitution of the Association of American Medical Colleges provides that any medical school may accept a student coming from an unapproved arts college but requires that it send a record of that fact to the office of the Association. The Council approves of this arrangement. Prospective medical students do well, however, to secure their premedical training in colleges that are included in the Council's publications. Otherwise they may find it difficult or impossible to enter the medical school of their choice; for, while there is no inviolable rule excluding applicants from unaccredited colleges, officials, in selecting from so large a number, give the preference to those whose preparation has been received in institutions that are known to conform to accepted standards. Many schools will not admit a student from an unaccredited college. In 1931 the Association of Americal Medical Colleges passed a resolution recommending the use of aptitude tests as an additional guide in the selection of students. These tests include (1) comprehension and retention, (2) visual memory, (3) memory for content, (4) logical reasoning, (5) scientific vocabulary, (6) ability to follow directions and (7) understanding of printed material. This recommendation likewise meets with the approval of the Council. Accordingly, the majority of schools in the selection of students employ the test scores along with college grades, letters from instructors and personal interviews. The aptitude test in the fall of 1933 was administered to 9,398 students in 546 colleges. The results of the test are made available to admitting officers in February.

While the premedical requirement of this Council and the College Association is two years, statistics compiled by the latter organization indicated that, in 1932, 28.6 per cent presented an A.B. degree for entrance, 20.5 per cent a B.S. degree, 26.6 per cent three and three plus years; 16.5 per cent two and two plus years, 4.1 per cent four years or more, and 3.4 per cent were listed under "others." The preliminary requirements of the individual schools will be found in table 2.

No attempt has been made to outline the admission requirements of the approved schools, since they vary considerably. It is essential that each applicant secure from the school he desires to enter an official statement of its requirements.

Although, for sixteen years, two years of premedical college training has been required by every approved medical school, there are still nine states that have failed to adopt this standard as a legal requirement. However, these states do not admit to licensure other than graduates of recognized medical schools, all of which have a requirement of at least two years of college work. These states should take measures to amend their laws to conform with universally accepted standards. Statutory requirements are shown in table 1 with the dates at which each became effective.

ACKNOWLEDGMENT

Statistics are presented herewith based on official reports from the approved, or class A, medical schools of the United States and Canada, from the medical schools of other countries, and from the thirteenth edition of the American Medical Directory. There are also included lists of hospitals approved for intern training and residencies by the Council based on reports received directly from the institutions, and a list of institutions offering graduate courses for physicians. Acknowledgment is here given for the prompt response and the kind cooperation of the officers of the schools and hospitals who have made the presentation of these statistics possible.

LENGTH OF MEDICAL COURSE

The medical course in the United States in general covers four calendar years. A few schools, namely, the medical schools of the University of Minnesota, Duke and Tennessee, operate on the quarter system permitting the student by utilizing the summer months to decrease the length of time necessary to obtain his degree. The two medical schools of the University of Chicago also operate on the quarter system but in addition have instituted the individualized plan of instruction whereby a student progresses as rapidly as his ability permits. Fourteen medical schools require a year of internship or research as a part of the medical course, thereby lengthening the course to five years. Duke University requires a two year internship. Ten schools offer only the work of the first two years. Five of the medical schools of Canada offer a five year course, including one, two or three years of premedical studies; three have a six year course with two years of premedical studies, one a four year course with two years of premedical education, and the University of Saskatchewan has a two year premedical requirement and offers only the first two years of the medical course. These data are included in table 2.

CURRICULUM

The Council recognizes as the standard curriculum that provided in the By-Laws [1] of the Association of American Medical Colleges, which is as follows:

Sec. 5. Curriculum. The entire course of four years shall consist of from 3,600 to 4,400 hours, distributed as from 900 to 1,100 hours per year, and shall be grouped as set forth in the following schedule, each group to be allotted approximately the percentage of hours of the whole number of hours in the courses as stated.

	Hours	Per Cent
1. Anatomy, including embryology and histology	14	18.5
2. Physiology	4.5	6
3. Biochemistry	3.5	4.5
4. Pathology, bacteriology and immunology	10	13
5. Pharmacology	4	5
6. Hygiene and sanitation	3	4
7. General medicine	20	26.5
Neurology and psychiatry		
Pediatrics		
Dermatology and syphilis		
8. General surgery	13	17.5
Orthopedic surgery		
Urology		
Ophthalmology		
Otolaryngology		
Roentgenology		
9. Obstetrics and gynecology	4	5
Total	76	100
Electives	24	0

When the teaching conditions demand it, a subject may be transferred from one division to another.

STATISTICS OF MEDICAL SCHOOLS

Table 2, pages 566 and 567, lists the approved medical schools that were in session during 1933-1934 and contains data regarding the premedical requirement, length of course, enrolment by classes, graduates, dates of the beginning and ending of the forthcoming session, the name of the executive officer and the month until when applications for admission to the freshman class are received. Changes in the classifications that have taken place since the publication of the educational statistics in 1933 [3] can be noted in the footnotes at the bottom of the table. Also contained in the footnotes are references to those institutions which have raised their premedical requirement for the coming session and those which admit students at varying times during the year. The data here presented constitute the basis also for several of the subsequent tabulations. Beginning on page 580 are given the essential facts concerning all approved medical colleges arranged by states.

This table differs slightly from that published in previous years. No tabulation has been made of the tuition fees or of the graduates with baccalaureate degrees, nor is there included the population of the cities wherein medical schools are located.

The figures indicate that there were 6,457 freshman students enrolled, 5,571 sophomores, 4,988 juniors and 4,937 seniors, during the session just ended. The students enrolled in the two medical schools of the University of Chicago and Duke University are not classified by years. In these three schools there were 846 students enrolled, a total of 22,799 students in the seventy-seven approved medical schools in the United States. This figure is exclusive of Canada, wherein there were 2,742 students enrolled as follows: first year, 622; second year, 595; third year, 529; fourth year, 500; fifth year, 320, and sixth year, 176. Altogether, 25,541 students were studying medicine, exclusive of those interning as a requirement for the degree, during the session just closed, of which 5,038 graduated from American schools and 476 from nine Canadian schools. There were enrolled seventy-five part time, 249 special and 787 graduate students.

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HOME STATES OF STUDENTS

Table 3, pages 568 and 569, shows from what states the students came who were in attendance at each medical school during the past session. The states having medical colleges contributed larger numbers of students than those which have no medical colleges. The state furnishing the greatest number of students this year was New York, 3,413, followed by Pennsylvania with 2,162, Illinois with 1,548, and Ohio with 1,346. Of the twelve states that do not have medical schools, five furnished more than 100 students, these being New Jersey, 943; Washington, 211; Rhode Island, 165; Florida, 134, and Maine, 124. Of the noncollege states, Montana had 65, Idaho 48, Delaware 43, Arizona 42, New Mexico 31, Nevada 16 and Wyoming 14. There were 108 students who came from the government possessions and 2,690 from foreign countries. The greater portion of this number, however, were Canadians enrolled in the medical schools of Canada.

SCHOOLS, STUDENTS AND GRADUATES BY STATES

The number of schools, students and graduates for each state are given in table 4. New York, with nine schools, the largest number, naturally had the largest number of students and graduates, 2,739 and 627, respectively. Pennsylvania, with six schools, was second with 2,403 students and 573 graduates. Illinois, with five schools, had 2,301 students and 537 graduates, and

TABLE 4.—*Schools, Students, and Graduates by States*

State	Schools	Students	Graduates
Alabama	1	124	..
Arkansas	1	200	50
California	4	1,013	215
Colorado	1	206	51
Connecticut	1	209	40
District of Columbia	3	1,045	271
Georgia	2	378	99
Illinois	5	2,301	537
Indiana	1	465	116
Iowa	1	353	72
Kansas	1	300	68
Kentucky	1	348	94
Louisiana	2	706	151
Maryland	2	728	176
Massachusetts	3	1,230	286
Michigan	2	775	164
Minnesota	1	514	114
Mississippi	1	51	...
Missouri	3	941	199
Nebraska	2	638	154
New Hampshire	1	41	...
New York	9	2,739	627
North Carolina	3	321	33
North Dakota	1	69	...
Ohio	3	946	212
Oklahoma	1	243	61
Oregon	1	230	56
Pennsylvania	6	2,403	573
South Carolina	1	159	31
South Dakota	1	57	...
Tennessee	3	784	174
Texas	2	710	134
Utah	1	70	...
Vermont	1	170	33
Virginia	2	575	145
West Virginia	1	138	...
Wisconsin	2	619	102
Totals	77	22,799	5,038

California, with four schools, had 1,013 students and 215 graduates. The District of Columbia and Massachusetts, each with three schools, had more students and graduates than California. Included among the number of students are the figures for ten institutions that offer only the preclinical courses.

REQUIRED INTERNSHIPS

Tables 5 and 6 show the state licensing boards and medical schools now requiring internships for licensure and the M.D. degree respectively. There is also

included the effective date of the requirement. The requirement became effective in Vermont during the current year and also at Louisiana State University Medical Center. While some of the boards may have

TABLE 5.—*Internship Required by Licensing Boards*

Pennsylvania	1914	South Dakota	1925
New Jersey	1916	Utah	1926
Alaska	1917	Wisconsin	1927
Rhode Island	1917	District of Columbia	1930
North Dakota	1918	Wyoming	1931
Washington	1919	West Virginia	1932
Michigan	1922	Oklahoma	1933
Illinois	1923	Oregon	1933
Delaware	1924	Vermont	1934
Iowa	1924		

TABLE 6.—*Hospital Internship Required by Medical Schools*

UNITED STATES	Effective Date
University of Minnesota Medical School	1915
Stanford University School of Medicine	1919
University of Chicago, Rush Medical College	1919
University of California Medical School	1919
Marquette University School of Medicine	1920
Northwestern University Medical School	1920
University of Illinois College of Medicine	1922
Loyola University School of Medicine	1922
Wayne University College of Medicine	1924
University of Cincinnati College of Medicine	1926
College of Medical Evangelists	1927
University of Chicago, The School of Medicine of the Division of the Biological Sciences	1930
Duke University School of Medicine*	1932
University of Southern California School of Medicine	1933
Louisiana State University Medical Center	1934
CANADA	
University of Manitoba Faculty of Medicine	
Dalhousie University Faculty of Medicine	
University of Montreal Faculty of Medicine	

* Requires a two-year internship.

their own lists of hospitals recommended for intern training, generally the Council's list of hospitals approved for internships is followed. This list in a revised form will be found beginning on page 588.

STUDENT INTERNS

Fifteen medical schools in the United States and three in Canada require a year's internship in a hospital or other acceptable clinical work as a prerequisite for

TABLE 7.—*Students Serving Internships During the Session 1933-1934 as a Prerequisite for Graduation*

University of California Medical School	56
College of Medical Evangelists	90
University of Southern California School of Medicine	30
Stanford University School of Medicine	41
Loyola University School of Medicine	102
Northwestern University Medical School	146
University of Chicago, Rush Medical College	148
University of Chicago, The School of Medicine of the Division of the Biological Sciences	19
University of Illinois College of Medicine	148
Louisiana State University Medical Center	28
Wayne University College of Medicine	72
University of Minnesota Medical School	146
Duke University School of Medicine	31*
University of Cincinnati College of Medicine	72
Marquette University School of Medicine	54
University of Manitoba Faculty of Medicine	70
Dalhousie University Faculty of Medicine	33
University of Montreal Faculty of Medicine	51
Total	1,337

* Degrees are awarded prior to internship.

the M.D. degree. Duke University School of Medicine grants the degree after the completion of the senior year, but all graduates are required to spend at least two years in hospital or laboratory work after graduation. These schools and the number of students interning during 1933-1934 are contained in table 7. There were 1,337 such individuals, 113 more than in the previous session. Of these 1,337 interns, 154 were Canadian students, the majority of whom completed their internship in Canadian hospitals, leaving 1,183 United States students.

MEDICAL GRADUATION AND INTERNSHIP

Table 8 indicates the present relationship between the number of graduates of medical colleges in the United States and Canada and the number serving internships.

TABLE 8.—*Graduates of 1933 and Fifth Year Students Who Have Served or Are Serving Internships*

School	Number of Graduates	Number Interning
University of Arkansas	45	41
University of California	*	52
College of Medical Evangelists	*	89
University of Southern California	*	30
Stanford University	*	41
University of Colorado	46	46
Yale University	38	38
Georgetown University	132	132
George Washington University	63	57
Howard University	42	42
Emory University	52	50
University of Georgia	38	38
Loyola University	*	102
Northwestern University	*	157
Rush Medical College	*	148
Division of Biological Sciences	*	13
University of Illinois	*	148
Indiana University	103	101
State University of Iowa	93	92
University of Kansas	58	56
University of Louisville	85	79
Louisiana State University	*	28
Tulane University	103	102
Johns Hopkins University	72	67
University of Maryland	84	81
Boston University	53	52
Harvard University	129	129
Tufts College	118	105
University of Michigan	135	134
Wayne University	*	72
University of Minnesota	*	111
St. Louis University	114	112
Washington University	93	90
Creighton University	72	66
University of Nebraska	74	73
Albany Medical College	30	30
Long Island College	99	98
University of Buffalo	64	61
Columbia University	91	88
Cornell University	57	57
New York Homeopathic Medical College	69	69
University and Bellevue Hosp. Medical College	121	110
University of Rochester	37	37
Syracuse University	40	40
Duke University	39†	39
University of Cincinnati	*	72
Western Reserve University	61	61
Ohio State University	88	80
University of Oklahoma	56	56
University of Oregon	51	51
Hahnemann Medical College	108	108
Jefferson Medical College	140	140
Temple University	112	111
University of Pennsylvania	138	133
Woman's Medical College	27	24
University of Pittsburgh	62	62
Medical College of South Carolina	35	34
University of Tennessee	105	100
Meharry Medical College	36	36
Vanderbilt University	42	42
Baylor University	75	69
University of Texas	70	68
University of Vermont	38	38
University of Virginia	59	59
Medical College of Virginia	87	82
University of Wisconsin	50	50
Marquette University	*	54
University of Alberta	15	13
University of Manitoba	*	70
Dalhousie University	*	33
Queen's University	48	40
University of Western Ontario	37	32
University of Toronto	120	107
McGill University	84	84
University of Montreal	*	51
Laval University	49	12
Totals	4,282	5,375

* An internship or other acceptable clinical work is a requirement for graduation.
† Two year internship requirement after graduation.

The data refer to graduates of 1933 and fifth year students who have served or were serving internships at the time the data was requested of medical schools,

which was in July of this year. There are 1,183 students of the United States and 154 of Canada serving internships as a requirement for the degree, a total of 1,337, included in this table. The figure for the graduates differs from that mentioned elsewhere in these statistics because those interning as a requirement for the degree are omitted and all graduates of the year 1933 are included, while the statistics elsewhere list only those graduated since July 1, 1933. The second column, however, includes those serving internships as a requirement for the degree. With the exception of one in Canada, every school in the list has more than 90 per cent of its graduates serving internships, and in twenty-three schools 100 per cent interned. Excluding those schools that require the internship for graduation, 94 per cent of all graduates here listed have this added experience. It is a known fact that there is a scarcity of internships and it may be that of the 6 per cent who have not been reported as interning many have found it difficult to secure internships in approved hospitals.

TABLE 9.—*Distribution by Sex*

	Students		Graduates	
	Men	Women	Men	Women
University of Alabama	121	3	..	..
University of Arkansas	191	9	47	3
University of California	191	35	47	9
College of Medical Evangelists	370	36	83	5
University of Southern California	165	6	25	5
Stanford University	198	12	37	4
University of Colorado	197	9	49	2
Yale University	191	18	37	3
Georgetown University	546	..	154	..
George Washington University	269	25	65	5
Howard University	198	7	46	1
Emory University	225	..	60	..
University of Georgia	151	2	39	..
Loyola University	440	20	89	..
Northwestern University	533	15	162	4
Rush Medical College	316	12	135	13
Division of the Biological Sciences	293	32	18	1
University of Illinois	618	22	113	2
Indiana University	448	17	110	6
State University of Iowa	341	12	71	1
University of Kansas	288	12	63	5
University of Louisville	338	10	91	3
Louisiana State University	203	7	27	1
Tulane University	483	13	120	3
Johns Hopkins University	250	34	65	8
University of Maryland	438	6	101	2
Boston University	230	16	51	2
Harvard University	516	..	132	..
Tufts College	444	24	97	4
University of Michigan	419	32	89	9
Wayne University	316	8	64	2
University of Minnesota	490	24	109	5
University of Mississippi	51	..	..	..
University of Missouri	77	3	..	..
St. Louis University	518	..	108	..
Washington University	325	18	84	7
Creighton University	294	4	67	2
University of Nebraska	332	8	81	4
Dartmouth Medical School	41	..	..	..
Albany Medical College	107	2	20	..
Long Island College	419	12	108	3
University of Buffalo	269	15	61	2
Columbia University	379	35	94	5
Cornell University	242	29	46	10
New York Homeopathic Medical College	314	12	72	..
University and Bellevue Medical College	500	22	105	3
University of Rochester	171	10	45	1
Syracuse University	195	6	52	..
University of North Carolina	62	4	..	..
Duke University	190	3	32	1
Wake Forest College	62	..	..	..
University of North Dakota	68	1	..	..
University of Cincinnati	297	12	67	4
Western Reserve University	262	11	51	2
Ohio State University	353	11	85	3
University of Oklahoma	232	11	61	..
University of Oregon	214	16	54	2
Hahnemann Medical College	470	..	95	..
Jefferson Medical College	567	..	143	..
Temple University	442	15	115	3
University of Pennsylvania	507	17	130	3
Woman's Medical College	...	122	..	19
University of Pittsburgh	252	11	61	4
Medical College of South Carolina	155	4	31	..
University of South Dakota	55	2	..	..
University of Tennessee	398	14	83	3
Meharry Medical College	175	3	36	2
Vanderbilt University	180	14	48	2
Baylor University	351	9	61	3
University of Texas	330	20	68	2
University of Utah	67	3	..	..
University of Vermont	162	8	30	3
University of Virginia	229	7	51	1
Medical College of Virginia	329	10	91	2
West Virginia University	132	6	..	..
University of Wisconsin	290	27	45	4
Marquette University	297	5	50	3
University of Alberta	167	13	20	4
University of Manitoba	177	21	69	3
Dalhousie University	145	3	31	1
Queen's University	296	..	44	..
University of Western Ontario	130	9	23	1
University of Toronto	732	62	97	9
McGill University	483	8	79	1
University of Montreal	185	1	51	..
Laval University	263	..	43	..
University of Saskatchewan	45	2	..	..
Totals	24,402	1,139	5,284	230

DISTRIBUTION BY SEX

Students and graduates classified by sex are shown in table 9. There were seventy-five schools which had both men and women students in the United States and Canada, of which sixty had women graduates. Altogether there were 24,402 men and 1,139 women students, and 5,284 men and 230 women graduates. There is one medical college for women, the Woman's Medical College of Pennsylvania, which had 122 students and 19 graduates, leaving 1,017 women students pursuing their medical education and 211 who completed the course in coeducational institutions.

TABLE 10.—*Women in Medicine in the United States*

Year	Women Students	Percentage of All Students	Women Graduates	Percentage of All Graduates
1905	1,073	4.1	219	4.0
1910	907	4.0	116	2.6
1915	592	4.0	92	2.6
1920	818	5.8	122	4.0
1925	910	5.0	204	5.1
1926	935	5.0	212	5.4
1927	964	4.9	189	4.7
1928	929	4.5	207	4.9
1929	925	4.4	214	4.8
1930	955	4.4	204	4.5
1931	990	4.5	217	4.6
1932	955	4.3	208	4.2
1933	1,056	4.7	214	4.4
1934	1,020	4.5	211	4.2

During the past year there were 1,020 women studying medicine in the United States, 36 more than last year. The percentage of women to all medical students this year is 4.5 as compared with 4.7 in 1933. There were 211 graduates, three fewer than last year. Of all the women matriculants, 122 students were in attendance at the one medical college for women, the Woman's Medical College of Pennsylvania, while 898 were matriculated in 67 coeducational schools. From the Woman's Medical College, 19 were graduated while 192 secured their degrees from coeducational institutions. As shown in table 10, the number of women students has been quite constant since 1920, although there has been an increase in the four years preceding 1934.

MEDICAL SCHOOLS, STUDENTS AND GRADUATES IN THE UNITED STATES, 1905-1934

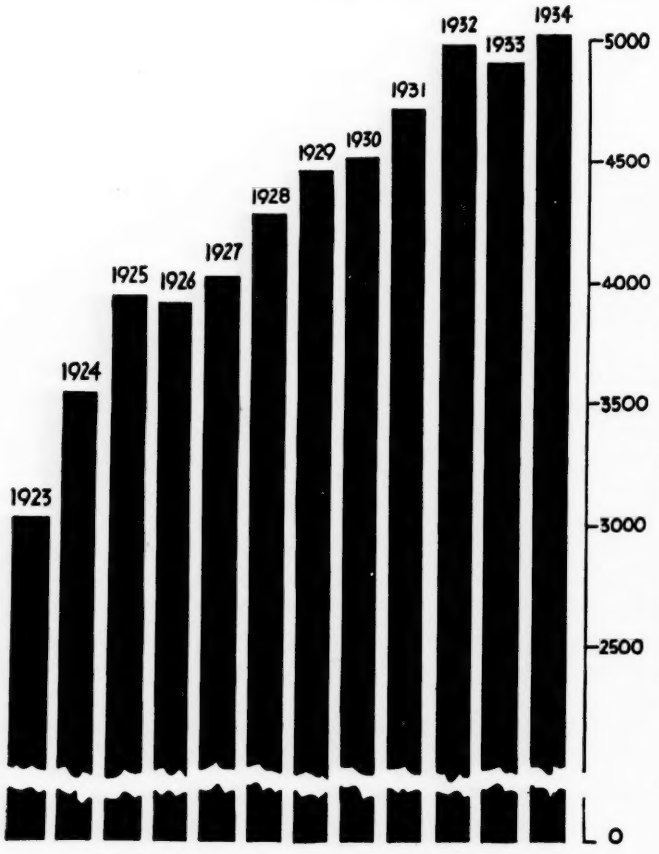
The number of medical schools, students and graduates in the United States for each five year period from 1905 to 1920, and for each year since, is shown in table 11. The total number of undergraduate medical students for the college session 1933-1934 was 22,799, an increase of 333 over the previous session. This is the largest number of students enrolled since 1905, when 26,147 were in attendance at the 160 medical schools then existing. Also included are figures covering the number of students enrolled in schools offering only the preclinical courses. Not included in the total number of students for 1934 are 75 part time, 249

special and 787 graduate students majoring in the medical school but not working for M.D. degrees.

The largest number of medical colleges existed in 1906, when there were 162.

Again referring to table 11, it will be noted that the total number of graduates was 5,038, an increase of 143 over the preceding session. With the exception of the slight decrease in the number of graduates in 1933, as compared with previous years, there has been a gradual increase since 1925, which is shown graphically in the chart. As will be noted, there were noticeable increases in 1924 and 1925. While there was a decrease in the number of graduates in 1933, there was an increase in the number of students.

In this connection it is interesting to note the number enrolled in the various classes in the United States for each session from 1929-1930 to 1933-1934 inclusive,



Increase of medical graduates in the United States.

as shown in table 12. The total attendance for the first year for the session 1933-1934 was 6,457, or 31 more than the number enrolled for the session 1932-1933. The figure, however, is 197 more than were enrolled during 1931-1932. The total attendance for the remainder of the classes was, respectively, 5,571, 4,988 and 4,937. The two medical schools of the University of Chicago are not operated under the promotion by class system but on an individual plan. It is not possible, therefore, to group them into the figures given. This is likewise true of the enrolment at Duke University School of Medicine. They are, however, included in the totals. There were 193 students enrolled at Duke, 325 at the School of Medicine of the Biological Sciences of the University of Chicago and 328 at Rush Medical College, a total of 846. There were 1,202 more students enrolled than in 1929-1930. Only one new medical school has opened since that session, namely, the Louisiana State University Medical Center, which had an enrolment of 210 for the session of 1933-1934. Excluding the students of this university, there were 992 more students enrolled during the past college session in the seventy-six medical schools that existed in 1930.

The Association of American Medical Colleges[4] reports that there were 29,940 (includes figures from several Canadian schools) applications for admission

TABLE 11.—*Schools, Students and Graduates in the United States*

Year	No. Schools	Students*	Graduates
1905	160	26,147	5,606
1910	131	21,526	4,440
1915	96	14,891	3,536
1920	85	13,798	3,047
1921	83	14,466	3,186
1922	81	15,635	2,520
1923	80	16,960	3,120
1924	79	17,728	3,562
1925	80	18,200	3,974
1926	79	18,840	3,962
1927	80	19,662	4,035
1928	80	20,545	4,262
1929	76	20,878	4,446
1930	76	21,597	4,565
1931	76	21,982	4,735
1932	76	22,135	4,936
1933	77	22,466	4,895
1934	77	22,799	5,038

* Includes figures for schools offering preclinical courses also.

to the freshman class, representing 12,128 applicants, and of these 7,578 (includes figures from several Canadian schools) were accepted and 4,585 refused. However, as already indicated, only 6,457 actually enrolled for the freshman year, exclusive of the University of Chicago and Duke University enrolment. It may be noted that over 700 students were accepted by medical schools who did not matriculate in a medical school in 1933-1934.

NEGROES IN MEDICAL SCHOOLS

The Negro medical students for the session 1933-1934 are recorded by classes in table 13. The totals for 1932-1933 are shown for comparison. There were 424 students and 100 graduates, a decrease of four and nine, respectively, over the figure for the previous

TABLE 12.—*Students in the United States Shown by Classes—1929-1934*

	1st Year	2d Year	3d Year	4th Year	Total
1929-1930	6,457	5,496	4,931	4,713	21,597
1930-1931	6,456	5,538	5,080	4,908	21,982
1931-1932	6,260*	5,462*	4,932*	4,885*	22,135
1932-1933	6,426*	5,479*	5,017*	4,948*	22,466
1933-1934	6,457†	5,571†	4,988†	4,937†	22,799

* Enrolment for the two medical schools of the University of Chicago not included.

† Enrolment for the two medical schools of the University of Chicago and Duke University not included.

year. Meharry Medical College was organized in 1876 as a medical college for Negro youth, and at Howard University College of Medicine, organized in 1869, they compose a majority of those in attendance. These two schools graduated the majority of the Negro students. All other schools enrolled less than five.

TUITION AND OTHER FEES

In table 14, the eighty-seven medical colleges of the United States and Canada have been grouped according to the amount of fees charged. To arrive at the figures listed, an average was compiled of the fees for each

4. J. A. Am. M. Coll. **9**: 94 (March) 1934.

school. Three colleges have fees of less than $100 a year. These were the State University of Louisiana, North Dakota and Oklahoma. They, however, charge an additional fee of $300, $90 and $200, respectively, for nonresidents. The eleven colleges having fees over $500 are Yale, George Washington, Johns Hopkins, Columbia, Cornell, Long Island, New York Homeopathic, Syracuse, University and Bellevue, Buffalo and Pennsylvania. There were thirty-two universities which made an additional charge for nonresidents, ranging from $50 by the Universities of Mississippi, Missouri, Cincinnati (nonresidents of Cincinnati), Tennessee and Virginia to $300 exacted by the Universities of California and Louisiana State. The lowest nonresident fee was charged by the University of Oregon, $20, followed by the University of Utah, $35, and the University of Vermont, $45 ($20 for the senior year). All other schools had a nonresident fee of $50 or more. The fees are not listed in these statistics by individual schools other than in the descriptions beginning on page 580. Though the total annual fees in some instances seem somewhat large, they do not by any means cover the cost of the instruction that is given. No medical school at the present time can maintain extensive laboratories, pay the essential salaries to teachers and properly teach modern medicine without an income larger than that derived from students' fees. Medical schools, along with other institutions of higher learning, have been affected by the economic situation. Almost without exception income has been reduced and, in order to balance the budget, fees have been increased. In addition to student fees, many of the schools received donations from various sources throughout the session such as gifts, bequests and endowments, as well as their usual appropriations from state and private enterprises.

Provision, however, has been made for scholarships and loan funds for the benefit of deserving students.

TABLE 13.—*Negro Students and Graduates*

Name of School	Enrolment by Classes During 1933-1934					
	1st Year	2d Year	3d Year	4th Year	Totals	Graduates
University of California Medical School	..	..	..	..	..	2
College of Medical Evangelists	1	..	2	1	4	1
Howard University College of Medicine	52	44	55	48	199	46
Loyola University School of Medicine	..	..	..	..	..	1
The School of Medicine of the Division of the Biological Sciences	1	3	..	..	4	..
University of Illinois College of Medicine	1	1	..	1	3	..
Indiana University School of Medicine	..	2	..	1	3	1
State University of Iowa College of Medicine	..	..	..	1	1	1
University of Kansas School of Medicine	1	..	..	..	1	..
Tufts College Medical School	..	..	1	..	1	1
University of Michigan Medical School	1	..	..	2	3	2
Wayne University College of Medicine	..	..	..	1	1	..
Long Island College of Medicine	..	1	..	..	1	..
Columbia Univ. College of Phys. and Surgs.	..	1	..	2	3	2
New York Homeopathic Medical College	1	..	1	..	2	..
University and Bellevue Hosp. Medical College	..	..	1	..	1	..
Syracuse University College of Medicine	1	..	..	..	1	..
University of Cincinnati College of Medicine	..	..	1	..	1	..
Western Reserve University School of Medicine	..	..	1	1	2	1
Ohio State University College of Medicine	2	1	..	1	4	1
Temple University School of Medicine	1	..	..	..	1	..
University of Pennsylvania School of Medicine	2	..	..	1	3	1
Woman's Medical College of Pennsylvania	1	..	..	..	1	..
Meharry Medical College	45	49	44	40	178	38
Dalhousie University Faculty of Medicine	..	..	..	..	..	1
McGill University Faculty of Medicine	1	2	2	..	5	1
University of Montreal Faculty of Medicine	..	1	..	..	1	..
	111	105	108	100	424	100
Totals during 1932-1933	120	115	94	99	428	91

Forty-six medical schools report that they have funds available for scholarships and fifty-seven have loan funds. The students who received assistance by either of these methods during the last college session number 2,373.

The Federal Emergency Relief Administration has adopted a plan of part time employment of college students during the college year 1934-1935. Students may be assigned to extension, adult education, recreation and other activities that increase the usefulness of the college to the community, in addition to clerical, library and research work. The salary earned shall be not more than $20 per calendar month per student and shall be earned by socially desirable work. Any school desiring should apply for such aid for its students to the State Federal Emergency Relief Administration and refer to Forms E-15 dated Feb. 2, 1934, E-29 dated July 3, 1934 and E-29L dated July 5. Students should apply directly to the medical school for admission under this plan. It is planned to provide aid for about 100,000.

TABLE 14.—*Fees, 1933-1934—United States and Canada* *

	Schools
Under $100	3
$100 to $200	13
200 to 300	23
300 to 400	17
400 to 500	20
500 or over	11
Total	87

* Based on fees charged resident students.

CITIZENS OF THE UNITED STATES REPORTED ENROLLED IN MEDICAL FACULTIES ABROAD

In 1931, in view of the reported exodus of citizens of the United States to foreign medical schools, inquiries were sent to all schools. This study has been carried on since and the results for the year 1933-1934 are shown in table 15. There were 1,428 American students and 86 graduates in the eighty-four institutions reporting.

In February 1933, the Federation of State Medical Boards adopted the following resolution:

1. That no American student matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination who does not, before beginning such medical study, secure from a state board of medical examiners or other competent state authority a certificate endorsed by the Association of American Medical Colleges or the Council on Medical Education and Hospitals of the American Medical Association showing that he has met the premedical educational requirements prescribed by the aforementioned associations.

2. That no student either American or European matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges, and the Council on Medical Education and Hospitals of the American Medical Association, and graduation from a European medical school after a medical course of at least four academic years, and submit evidence of having satisfactorily passed the examination to obtain a license to practice medicine in the country in which the medical school from which he is graduated is located.

This policy of the federation has been translated into action by some of the states. For the purpose of keeping closely in touch with developments in other countries, a joint committee was appointed representing

the Council on Medical Education and Hospitals of the American Medical Association, the Federation of State Medical Boards of the United States, the New York Board of Regents, the National Board of Medical Examiners, and the Association of American Medical Colleges.

The governments of many European countries have already taken cognizance of the situation and sent representatives to this country to discuss appropriate measures for dealing with students from the United States. In some universities, entrance requirements have been raised; in some, student enrolment has been limited. In all cases, credentials will be carefully scrutinized.

The Committee on Foreign Medical Students published its report [5] in November 1933, which was adopted by the Federation in February 1934 and reported its adoption by all its constituent licensing boards. Its recommendations were as follows:

1. That no action be taken in reference to the admission of native-born Europeans for admission to American medical licensing examinations and that, so far as is consistent with the maintenance of high educational and professional standards, physicians who are victims of racial and religious persecution in Germany be permitted the privilege of practicing medicine in the United States.

2. That the voluntary method of selecting in this country students for admission to Italian medical schools serve as a model for similar agreements with other European countries and that a committee be appointed to advise and assist European authorities in reference to the selection of American students.

3. That the committee be continued with authority to carry on further negotiations with the various European authorities looking toward a proper selection and restriction of American students in Europe.

TABLE 15.—*Citizens of the United States Enrolled in Medical Faculties Abroad*

	Totals		Students, Academic Year 1933-1934: Enrolled	Completed Course
Austria	22	1		
Karl-Franzens-Universität, Graz			11	1
Leopold-Franzens-Universität, Innsbruck			11	0
Belgium	11	0		
Université Libre de Bruxelles			8	0
Université Catholique de Louvain			3	0
Brazil	1	0		
Faculdade de Medicina do Parana, Curitiba			1	0
China	15	0		
Peiping Union Medical College			1	0
Pennsylvania Medical School, Shanghai			14	0
Colombia	1	0		
Universidad Nacional, Bogotá			1	0
England	64	2		
University of Birmingham			3	0
University of Bristol			5	0
University of Durham			7	0
University of London				
Charing Cross Hospital Medical School			9	0
Guy's Hospital Medical School			1	0
King's College Hospital Medical School			1	0
London Hospital Medical College			1	0
London (Royal Free Hospital) School of Medicine for Women			2	0
Middlesex Hospital Medical School			1	0
St. Bartholomew's Hospital Medical College			18	0
St. Mary's Hospital Medical School			2	0
St. Thomas's Hospital Medical School			1	0
Westminster Hospital Medical School			4	0
University of Oxford			2	0
University of Sheffield			7	2
France	86	2		
Université de Bordeaux			2	0
Université de Lyon			5	0
Université de Montpellier			10	0
Université de Nancy			3	0
Université de Paris			62	2
Université de Strasbourg			3	0
Université de Toulouse			1	0
Germany	317	8		
Friedrich-Wilhelms-Universität, Berlin			113	1
Rheinische Friedrich-Wilhelms-Universität, Bonn			38	0
Schlesische-Friedrich-Wilhelms-Universität, Breslau			2	0
Friedrich-Alexanders-Universität, Erlangen			6	0
Johann Wolfgang Goethe-Universität, Frankfurt-am-Main			20	0
Hessische Ludwigs-Universität, Giessen			10	0
Vereinigten Friedrichs-Universität, Halle-Wittenberg			13	0
Universität Heidelberg			34	1
Thüringische Landesuniversitat, Jena			1	0
Universität Köln			11	0
Universität Leipzig			26	2
Ludwig-Maximilians-Universität, München			28	4
Westfälische Wilhelms-Universität, Münster			8	0
Universität Rostock			3	0
Eberhard-Karls-Universität, Tübingen			4	0
Hungary	23	1		
Magyar Királyi Pázmány Petrus Tudományegyetem, Budapest			15	1
Magyar Királyi Erzsébet Tudományegyetem, Pecs			2	0
Magyar Királyi Ferencz József Tudományegyetem, Szeged			6	0
Ireland	4	1		
Queen's University, Belfast			1	0
National University of Ireland				
University College, Dublin			1	1
University of Dublin School of Physic			2	0
Italy	169	17		
Regia Università di "Benito Mussolini" di Bari			4	0
Regia Università di Cagliari			1	0
Regia Università di Firenze			3	0
Regia Università di Milano			1	0
Regia Università di Padova			4	0
Regia Università di Palermo			4	0
Regia Università di Pavia			1	0
Regia Università di Roma			144	14
Regia Università di Sassari			2	0
Regia Università di Siena			1	1
Regia Università di Torino			4	2
Netherland India	1	0		
Geneeskundige Hoogeschool, Batavia			1	0
Netherlands	1	0		
Rijks-Universiteit te Leiden			1	0
Philippine Islands	2	0		
University of Santo Tomas, Manila			2	0
Poland	10	2		
Uniwersytet Jagielloński, Cracow			3	1
Uniwersytet Jana Kazimierza, Lwów			3	1
Uniwersytet Warszawski			2	0
Uniwersytet Stefana Batorego, Wilno			2	0
Portugal	1	0		
Universidade do Porto			1	0
Scotland	333	42		
University of Aberdeen			11	1
School of Medicine of the Royal Colleges, Edinburgh			30	0
University of Edinburgh			43	4
Anderson College of Medicine, Glasgow			64	0
St. Mungo's College Medical School, Glasgow			55	0
University of Glasgow			47	1
University of St. Andrews			83	36
Switzerland	351	8		
Universität Basel			81	0
Universität Bern			118	4
Université de Genève			49	4
Université de Lausanne			31	0
Universität Zurich			72	0
Syria	11	2		
American University of Beirut			11	2
Yugoslavia	5	0		
Zagrebaskog Universiteta			5	0
Totals by countries	1,428*	86		

* It is believed this figure should be larger inasmuch as the following schools reported large numbers of American students in 1933 and have not replied to the 1934 request: Vienna, Austria; Karlovy, Prague, Czechoslovakia; Hamburg, and Königsburg, Germany; Bologna, and Naples, Italy.

In further considering the problem, the federation at its February 1934 meeting passed the following resolution in order that an influx of American students to countries other than Europe might be curtailed if possible:

WHEREAS, It has been brought to the attention of the Federation of State Medical Boards of the United States that an unknown number of American students are studying medicine in foreign medical schools where adequate information concerning standards of medical education is not available; therefore, be it

Resolved, That the Federation of State Medical Boards of the United States recommend to its constituent state boards, and to the National Board of Medical Examiners, that, until adequate information is avail-

5. Fed. Bull. **19**: 337 (Nov.) 1933.

able, these boards deny graduates of foreign medical schools admission to the various medical licensure examinations; and be it further

Resolved, That a copy of these resolutions be transmitted to the Council on Medical Education and Hospitals of the American Medical Association and to the Association of American Medical Colleges, with the request that full and adequate publicity be given to this resolution.

It is believed that a better understanding has been achieved and a noticeable decrease is indicated in the number at present enrolled and it is believed that the figure will steadily decrease.

TABLE 16.—*Citizens of the United States Reported Enrolled in Medical Faculties Abroad—1933-1934*

	Students 1930-1931		Students 1931-1932		Students 1932-1933		Students 1933-1934	
	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course	Enrolled	Completed Course
Austria	114	3	175	6	271	3	22	1
Belgium	3	0	4	1	10	1	11	0
Brazil	..	..	..	..	..	..	1	0
China	..	..	..	..	12	0	15	0
Colombia	..	..	..	..	..	..	1	0
Czechoslovakia	2	0	4	0	19	0	..	..
England	52	2	61	4	57	1	64	2
Finland	1	0	..	..	..	..	..	..
France	25	2	62	6	78	5	86	2
Germany	72	1	189	5	439	41	317	8
Greece	..	..	..	..	4	1	..	..
Hungary	9	1	15	2	13	1	23	1
Ireland	14	1	21	0	20	0	4	1
Italy	78	11	155	4	282	14	169	17
Japan	..	..	1	0	..	..	..	..
Lithuania	..	..	4	0	4	0	..	..
Mexico	1	0	1	1	..	..	..	..
Netherland India	..	..	..	..	1	0	1	0
Netherlands	..	..	..	..	..	..	1	0
Philippine Islands	..	..	..	..	2	0	2	0
Poland	2	0	1	0	9	0	10	2
Portugal	..	..	..	..	..	..	1	0
Scotland	256	19	257	25	416	9	333	42
South Africa, Union of	..	..	1	0	..	..	..	..
Switzerland	65	4	214	1	405	10	351	8
Syria	16	2	8	0	7	0	11	2
Yugoslavia	..	..	2	1	5	1	5	0
Totals	710	46	1,175	56	2,054	87	1,428*	86

* See footnote to table 15.

The number of students studying in the various countries during the four years in which the study has been carried on is indicated in table 16. It can readily be seen that the largest numbers were enrolled in Germany, Scotland, Switzerland and Italy. While in the beginning Scotland had the greatest number, this country was one of the first to curtail admission of such students. Thereafter, large numbers enrolled in Germany and Italy and lastly in Switzerland. There were, however, fewer admitted to the study of medicine in all European countries in 1933-1934 than formerly. The figures given represent largely those previously enrolled.

With the cooperation of the State Department at Washington, an investigation is being made of medical education and licensure in Latin America. The information that is being obtained includes name and location of all existing professional schools with the year in which they were organized; preliminary training required for admission; requirements for degree of Doctor of Medicine, including length of course, subjects of the curriculum, time devoted to individual laboratory work, size and character of teaching hospitals, number of students enrolled and requirements for practice by citizens of the United States.

HOSPITAL FACILITIES

Fifty-seven of the eighty-seven medical schools of the United States and Canada report that they maintain their own hospital or outpatient clinic, five report they have hospital affiliations and, seventeen that they do not maintain their own hospital or clinic, while eight did not answer.

Fifty-eight replied that indigent patients are accepted, one stated they are not and the remainder did not reply. In forty-nine, patients are accepted who are able to pay a part of the cost of their care, seven replied that they are not able, and the remainder did not comment. Thirty-four accept patients able to pay the full cost of their care, including a physicians' fee, nineteen do not, and others did not report.

RATIO OF PHYSICIANS TO POPULATION

The ratio of physicians to population in the United States based on physicians listed in the thirteenth edition of the American Medical Directory, which has just been issued, and the estimated census of July 1, 1933, is shown in table 17. These figures have been corrected by the omission of 6,866 names listed as "retired" or "not in practice." Hence the ratios given represent, it is believed, the nearest approximation that can be made to the number of physicians actually engaged in practice. In the entire country the ratio is one physician to 814 people. In seventeen states the ratio is over 1,000 and in practically all others it ranges above 500. The lowest ratio is that for the District of Columbia (290), but this is accounted for by the fact that many physicians are in the government service.

TABLE 17.—*Ratio of Physicians to Population in the United States*

	Estimated Population as of July 1, 1933	Physicians Listed in 1934 Directory†	Ratio
Alabama	2,697,000	2,051	1,315
Arizona	453,000	425	1,066
Arkansas	1,872,000	1,809	1,035
California	6,062,000	9,489	639
Colorado	1,052,000	1,760	598
Connecticut	1,646,000	2,178	756
Delaware	241,000	292	825
District of Columbia	495,000	1,704	290
Florida	1,554,000	1,592	976
Georgia	2,911,000	2,721	1,070
Idaho	447,000	368	1,215
Illinois	7,826,000	11,110	704
Indiana	3,291,000	3,874	850
Iowa	2,482,000	3,023	821
Kansas	1,900,000	2,056	924
Kentucky	2,648,000	2,707	978
Louisiana	2,153,000	2,065	1,043
Maine	802,000	922	870
Maryland	1,663,000	2,510	663
Massachusetts	4,318,000	6,704	644
Michigan	5,043,000	5,488	919
Minnesota	2,594,000	3,069	845
Mississippi	2,047,000	1,451	1,411
Missouri	3,668,000	5,364	684
Montana	537,606*	471	1,141
Nebraska	1,392,000	1,719	810
Nevada	93,000	131	710
New Hampshire	469,000	555	845
New Jersey	4,193,000	4,720	888
New Mexico	434,000	366	1,186
New York	12,965,000	22,180	585
North Carolina	3,275,000	2,385	1,373
North Dakota	687,000	502	1,369
Ohio	6,798,000	8,453	804
Oklahoma	2,459,000	2,314	1,063
Oregon	983,000	1,233	797
Pennsylvania	9,787,000	12,160	805
Rhode Island	702,000	869	808
South Carolina	1,748,000	1,275	1,371
South Dakota	702,000	560	1,254
Tennessee	2,664,000	2,835	940
Texas	6,023,000	6,414	939
Utah	518,000	512	1,012
Vermont	361,000	488	740
Virginia	2,441,000	2,563	952
Washington	1,599,000	1,902	841
West Virginia	1,774,000	1,729	1,026
Wisconsin	2,992,000	3,200	935
Wyoming	231,000	227	1,018
Totals	125,692,606	154,495	814

* No estimate available.
† Excluding those listed as retired or not in practice.

New York is next with 585, while in Colorado the ratio is 598. The state having the highest ratio is Mississippi, 1,411.

AMERICAN MEDICAL DIRECTORY

The number of physicians listed in the 1931 and 1934 editions of the American Medical Directory, indicating whether the medical profession has been added to or decreased, is included in table 18. The state showing the largest gain was New York with 1,808, 7.9 per cent. In New York 1,118 of those listed in 1931 were removed by death, 3,062 were new additions to the profession and 1,026 moved to New York from other states, while 1,162 residents of New York left the state, leaving a gain of 1,808. The greatest loss was in Arkansas, eighty-seven, or 4.4 per cent. For this state it might be noted that 191 were removed by death, 124 were new physicians and 80 moved to Arkansas from other states, while 100 left the state.

For the entire country there was a gain of 4,955, or 3.1 per cent. In this table no correction has been made for those retired or not in practice.

At the bottom of the table the states are divided into geographic divisions. All divisions but the East South Central showed a gain, the most noticeable being in the Middle Atlantic, 7.2 per cent, and the New England, 5.7 per cent, groups. The lowest gain was in the West North Central division, 0.1 per cent, while the loss in the East South Central group was 1.8 per cent.

TABLE 18.—*Physicians Listed 1931 and 1934 Editions American Medical Directory*

	No. of Physicians*		Difference	Percentage	
	1931	1934		Gain	Loss
Alabama	2,207	2,129	−78		3.5
Arizona	494	468	−26		5.3
Arkansas	1,977	1,890	−87		4.4
California	10,109	10,490	+381	3.6	
Colorado	1,898	1,874	−24		1.3
Connecticut	2,131	2,312	+181	7.8	
Delaware	278	301	+23	7.6	
District of Columbia	1,827	1,851	+24	1.3	
Florida	1,762	1,840	+78	4.2	
Georgia	2,888	2,811	−77		2.7
Idaho	383	388	+5	1.3	
Illinois	11,382	11,505	+123	1.1	
Indiana	4,073	4,049	−24		0.6
Iowa	3,125	3,141	+16	0.5	
Kansas	2,168	2,153	−15		0.7
Kentucky	2,867	2,808	−59		2.1
Louisiana	2,076	2,127	+51	2.4	
Maine	989	984	−5		0.5
Maryland	2,480	2,617	+137	5.2	
Massachusetts	6,595	7,012	+417	5.9	
Michigan	5,589	5,678	+89	1.6	
Minnesota	3,075	3,174	+99	3.1	
Mississippi	1,567	1,525	−42		2.7
Missouri	5,640	5,570	−70		1.2
Montana	484	480	−4		0.8
Nebraska	1,785	1,772	−13		0.7
Nevada	131	139	+8	5.8	
New Hampshire	567	602	+35	5.8	
New Jersey	4,357	4,915	+558	11.4	
New Mexico	374	393	+19	4.8	
New York	21,008	22,816	+1,808	7.9	
North Carolina	2,372	2,460	+88	3.6	
North Dakota	515	511	−4		0.8
Ohio	8,653	8,769	+116	1.3	
Oklahoma	2,484	2,409	−75		3.0
Oregon	1,275	1,308	+33	2.5	
Pennsylvania	12,051	12,608	+557	4.4	
Rhode Island	844	907	+63	6.9	
South Carolina	1,292	1,329	+37	2.8	
South Dakota	585	583	−2		0.3
Tennessee	2,962	2,970	+8	0.3	
Texas	6,475	6,679	+204	3.1	
Utah	489	521	+32	6.1	
Vermont	499	517	+18	3.5	
Virginia	2,584	2,659	+75	2.8	
Washington	1,920	1,999	+79	4.0	
West Virginia	1,782	1,779	−3		0.2
Wisconsin	3,104	3,302	+198	6.0	
Wyoming	234	237	+3	1.3	
Totals	156,406	161,361	+4,955	3.1	
Geographic Divisions:					
New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)	11,625	12,334	+709	5.7	
Middle Atlantic (New York, New Jersey, Pennsylvania)	37,416	40,339	+2,923	7.2	
East North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin)	32,801	33,303	+502	1.5	
West North Central (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas)	16,893	16,904	+11	0.1	
South Atlantic (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida)	17,265	17,647	+382	2.2	
East South Central (Kentucky, Tennessee, Alabama, Mississippi)	9,603	9,432	−171		1.8
West South Central (Arkansas, Louisiana, Oklahoma, Texas)	13,012	13,105	+93	0.7	
Mountain (Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada)	4,487	4,500	+13	0.3	
Pacific (Washington, Oregon, California)	13,304	13,797	+493	3.6	
Totals	156,406	161,361	+4,955	3.1	

* Including those listed as retired and not in practice.

PHYSICIANS AND SPECIALTIES

In table 19 are recorded figures showing the number of physicians who have reported that they limit their practice or declare an interest in a specialty. This information forms a part of their biographic record in the thirteenth edition of the American Medical Directory. Twenty-four specialties are included and are listed alphabetically with the exception of the three groups given at the end of the list, each of which includes two or more closely related specialties. The largest number limiting their practice to a specialty is found in internal medicine, 4,452, followed by surgery with 4,337 and ophthalmology, otology, laryngology and rhinology with 4,010. The smallest number limiting their practice are the bacteriologists, 34. A total of 26,756 indicate that they limit their practice to a specialty.

Of the 23,577 who declare a special interest in a specialty, the largest group is represented by surgery, 8,854, followed by pediatrics, 2,155; obstetrics, 2,001;

TABLE 19.—*Physicians Reported as Limiting Their Practice or Declaring a Special Interest in a Specialty as Published in 1934 Edition of American Medical Directory*

Specialty	Limit Practice	Declare a Special Interest	Totals
Anesthesia	159	384	543
Bacteriology	34	27	61
Clinical pathology	286	148	434
Dermatology	705	350	1,055
Industrial surgery	232	870	1,102
Internal medicine	4,452	...	4,452
Orthopedic surgery	722	319	1,041
Pathology	332	151	483
Pediatrics	1,734	2,155	3,889
Proctology	218	391	609
Public health	836	...	836
Roentgenology, radiology	1,169	754	1,923
Surgery	4,337	8,854	13,191
Tuberculosis	526	541	1,067
Urology	1,425	956	2,381
Gynecology	216	1,032	1,248
Obstetrics	356	2,001	2,357
Obstetrics and gynecology	1,119	1,774	2,893
Ophthalmology	1,177	323	1,500
Ophthalmology, otology, laryngology, rhinology	4,010	948	4,958
Otology, laryngology, rhinology	1,110	859	1,969
Neurology	107	127	234
Neurology and psychiatry	988	397	1,385
Psychiatry	506	216	722
Totals	26,756	23,577	50,333

obstetrics and gynecology, 1,774, and gynecology, 1,032. In other fields the number does not exceed 1,000.

Altogether, 50,333 of the 161,361 physicians listed in the United States, or 154,495 eliminating the 6,866 reported as retired or not in practice, 32.6 per cent, report that they limit their practice or declare a special interest in a specialty. Those who limit their practice constitute 17.3 per cent, and those who declare a special interest, 15.3 per cent of the profession.

The House of Delegates of the American Medical Association at its annual session in 1933 passed the following resolution:

Resolved, That the Council on Medical Education and Hospitals is hereby authorized to express its approval of such examining boards in medical specialties as conform to the standards of administration formulated by the Council; and be it further

Resolved, That the Board of Trustees of the American Medical Association be urged to use the machinery of the American Medical Association, including the publication of its directory, in furthering the work of such examining boards as may be accredited by the Council.

The following Essentials for Examining Boards in Specialties were approved by the House of Delegates at its 1934 session:

ESSENTIALS FOR EXAMINING BOARDS IN SPECIALTIES

BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO

I. ORGANIZATION

1. A special examining board to be approved by the Council should represent a well recognized and distinct specialty of medicine.

2. It should be composed of representatives of the national organizations of that specialty including the related section of the American Medical Association.

3. It should be incorporated.

4. A special board should:

   (*a*) Determine whether candidates have received adequate preparation as defined by the board.

   (*b*) Provide a comprehensive test of the ability and fitness of such candidates.

   (*c*) Certify to the competence of those physicians who have satisfied the requirements of the board.

II. DEFINITION OF SPECIAL FIELDS

The following branches of medicine at present are recognized as suitable fields for the certification of specialists:

1. Internal medicine
2. Surgery
3. Pediatrics
4. Obstetrics and gynecology
5. Ophthalmology
6. Otolaryngology
7. Dermatology and syphilology
8. Neurology and psychiatry
9. Urology
10. Orthopedic surgery
11. Radiology
12. Pathology

III. QUALIFICATION OF CANDIDATES

Each applicant for admission to the examination should be required to present evidence that he has met the following standards:

A. General Qualifications.[1]

1. Satisfactory moral and ethical standing in the profession.
2. A license to practice medicine.
3. Membership in the American Medical Association or, by courtesy, membership in such Canadian medical societies as are approved by the Council on Medical Education and Hospitals of the American Medical Association. Membership in other societies should not be required.

B. Professional Education.[1]

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association.
2. Completion of an internship of not less than one year in a hospital approved by the same Council.

C. Special Training[1] (to be effective not later than Jan. 1, 1938).

1. A period of study after the internship of not less than three calendar years in clinics, dispensaries, hospitals or laboratories recognized by the same Council as competent to provide a satisfactory training in the special field of study.
2. This period of specialized preparation shall include
   (*a*) intensive graduate training in anatomy, physiology, pathology, and the other basic medical sciences which are necessary to the proper understanding of the disorders and treatment involved in the specialty in question;
   (*b*) an active experience of not less than eighteen months in hospitals, clinics, dispensaries or diagnostic laboratories recognized by the Council as competent in the specialty;
   (*c*) examinations in the basic medical sciences of a specialty as well as in the medical, laboratory and public health aspects.
3. An additional period of not less than two years of practice.

IV. WITHDRAWAL

For reasons which are deemed sufficient, in the judgment of the Council on Medical Education and Hospitals, the recognition extended by the American Medical Association to holders of certificates from special examining boards may be withdrawn.

INTERNSHIPS AND RESIDENCIES

This issue of the Educational Number presents in a new form lists of hospitals approved for the training of interns and residents. The Council desires to make available to candidates for these positions more comprehensive and pertinent information. The data for the most part were obtained from the regular annual reports from all hospitals approved by the Council, supplemented by inspection reports and personal knowledge of the staff.

Under the heading "Classification of Patients," the data given will enable the prospective intern to know whether an institution serves predominantly private or charity patients.

TABLE 20.—*Approved Internship Hospitals*

	Beds and Bassinets	Admissions	Interns
Fifty teaching hospitals	30,671	511,237	1,221
Fifty government hospitals	29,903	410,047	908
Fifty church hospitals	13,105	190,648	266
Fifty independent hospitals	12,780	218,930	392

Teaching hospitals: one intern to 25 beds, to 418 admissions.
Government hospitals: one intern to 33 beds, to 452 admissions.
Church hospitals: one intern to 49 beds, to 716 admissions.
Independent hospitals: one intern to 33 beds, to 558 admissions.

Additional information is presented also in the column headed "Type of Internship," for it is recognized that desirable internships do not all necessarily follow the same pattern.

A "straight service" is one in which the intern spends his entire time in one clinical department.

A "rotating service" includes experience in each of the following branches: medicine, surgery, obstetrics, pediatrics, radiology and pathology. This type of service usually satisfies those state boards which have an intern requirement.

The "mixed internship," intermediate between the other two, offers training in more than one, but less than six, of the fields comprised in the full rotating service. A mixed internship may often be supplemented by special training in one or two fields in order to fulfil state board requirements.

Formerly the Council expressed the opinion that a hospital should employ interns in the ratio of one to each thirty beds. It has become evident however that, owing to fluctuations in the percentage of occupancy,

1. In case of an applicant whose training has been received outside the United States and Canada, the credentials must be satisfactory to the Advisory Board.

this standard is not entirely satisfactory. It has been suggested that there should be a definite ratio of interns to the number of patients shown in the average daily census. This proposal has the weakness that some hospitals have a very slow turnover, and that the interns' experience would therefore be less satisfactory than the census would indicate. The Council has therefore made a brief analysis of the ratio of interns to admissions in four types of institutions, each group being represented by a sample of fifty hospitals. The results are given in table 20.

TABLE 21.—*Approved Internship Hospitals with Highest Necropsy Percentages, 1933*

	Control	Deaths	Necropsies	Necropsy Percentage
1. St. Luke's Hospital, Kansas City, Mo...	Church	121	105	86.8
2. Bell Memorial Hosp. Kansas City, Kan.	State	208	173	83.2
3. Colorado General Hospital, Denver....	State	198	162	81.8
4. Columbus Hospital, Chicago.....	Church	43	35	81.4
5. St. Joseph Hospital, Kansas City, Mo..	Church	194	156	80.4
6. Research & Educational Hosp., Chicago	State	199	152	76.4
7. University of Chicago Clinics, Chicago.	Indep.	195	149	76.4
8. Kansas City General Hospital No. 1, Kansas City, Mo.....	City	704	529	75.1
9. University of Nebraska Hosp., Omaha.	State	160	118	73.8
10. Mount Sinai Hospital, Philadelphia....	Indep.	190	139	73.2
11. St. Elizabeths Hospital, Washington, D. C.	Fed.	275	200	72.7
12. State of Wisconsin Gen. Hosp., Madison	State	392	281	71.7
13. University Hospitals, Minneapolis.....	State	399	285	71.4
14. St. Joseph's Hospital, Reading, Pa....	Church	233	165	70.8
15. Reading Hospital, Reading, Pa.....	Indep.	233	155	69.5
16. Santa Fe Coast Lines Hospital, Los Angeles	Indus.	62	43	69.4
17. University of California Hospital, San Francisco	State	189	131	69.3
18. St. Margaret's Hospital, Kansas City, Kan.	Church	220	151	68.6
19. Albany Hospital, Albany, N. Y.....	Indep.	409	278	68.0
20. Grasslands Hospital, Valhalla, N. Y...	County	439	296	67.4

Indep.—Independent; Fed.—Federal; Indus.—Industrial.

Experience shows that hospitals employing fewer than four interns have difficulty in providing a well balanced service. There is a tendency to overemphasis on surgery, especially operations and routine history writing, with inadequate attention to physical examination and diagnosis. With few exceptions this type of service is undesirable.

The publication of figures showing the percentage of necropsies performed should be most helpful to prospective interns, for it is well known that an alert and efficient staff will maintain a creditable postmortem rate. Failure to satisfy the Council's requirement will necessarily lead to suspension from the approved list.

There is included a list of the twenty approved internship hospitals most successful in necropsy performance during 1933. Attention is called not only to the excellence of the figures but also to the fact that nearly every kind of hospital according to type of control is included. In the governmentally controlled group there are representatives of federal, state, county and city hospitals; in the voluntary group are to be found Jewish, Catholic, Protestant, independent and industrial hospitals. There is also the widest possible geographic distribution. The conclusion seems justified that any kind of hospital can readily exceed the minimum requirements if the staff is sufficiently interested in procuring necropsies.

DESCRIPTION OF MEDICAL COLLEGES

ALABAMA

University

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus near Tuscaloosa. Coeducational since 1920. Minimum entrance requirements are seventy semester hours of collegiate work. The course of study covers two years of thirty-six weeks each. The faculty includes 13 professors and 10 instructors, assistants, etc, a total of 23. The tuition fees are $271 each year. Total registration for 1933-1934 was 124. The sixty-ninth session begins Sept. 12, 1934, and ends May 28, 1935. The Dean is Stuart Graves, M.D.

ARKANSAS

Little Rock

UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, 300 West Markham Street.—Organized in 1879 as the Medical Department of Arkansas Industrial University. Present title in 1899. In 1911 the College of Physicians and Surgeons united with it and it became an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching was suspended in 1918 but resumed in 1923. Coeducational since organization. The faculty consists of 35 professors and 55 lecturers and assistants, total 90. The curriculum covers four years of nine months each. Entrance requirements are two years of collegiate work in addition to a four-year high school course. The fees for the four years, respectively, for residents of Arkansas are $200, $200, $200 and $200; nonresidents are charged $150 additional each year. The total registration for 1933-1934 was 200; graduates, 50. The fifty-sixth session begins Sept. 19, 1934, and ends June 3, 1935. The Dean is Frank Vinsonhaler, M.D.

CALIFORNIA

Berkeley-San Francisco

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, University Campus, Berkeley; Third and Parnassus avenues, San Francisco.—Organized in 1862 as the Toland Medical College. The first class graduated in 1864. In 1872 it became the Medical Department of the University of California. In 1909, by legislative enactment, the College of Medicine of the University of Southern California, at Los Angeles, became a clinical department but was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica, and therapeutics were provided. Coeducational since organization. Three years of collegiate work is required for admission. The work of the first year is given at Berkeley and that of the last three years at San Francisco. The faculty is composed of 132 professors and 225 associates and assistants, a total of 357.. The course covers four years of eight months each, and an additional fifth year consisting of an internship in a hospital or of special work in a department of the medical school. Fees for the four years, respectively, for residents of California are $277, $235, $235 and $235; nonresidents are charged $300 additional each year. Total registration for 1933-1934 was 226; graduates, 56. The sixty-second session begins Aug. 20, 1934, and ends May 18, 1935. The Dean is Langley Porter, M.D., San Francisco.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS.—Organized in 1909. The first class graduated in 1914. The laboratory departments are at Loma Linda, the clinical departments at Los Angeles. Coeducational since organization. The faculty is composed of 58 professors and 196 associates, assistants and instructors, a total of 254. The course covers a period of five years, including one year of internship. During the first and second years, the students are in school twelve months each year. This is accomplished by means of the "cooperative plan," the student spending alternate months in an approved hospital in practical lines of medical training. Sixty-four semester hours of collegiate work is required for admission. The total fees for the four years, respectively, are $385, $375, $480 and $440. The total registration for 1933-1934 was 406; graduates, 88. The twenty-sixth session begins July 2, 1934, and ends June 16, 1935. The Dean of the Loma Linda Division is E. H. Risley, M.D., and the Dean of the Los Angeles Division is Arthur E. Coyne, M.D.

Los Angeles

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, 3551 University Avenue.—Organized in 1885 as the University of Southern California College of Medicine. First class graduated in 1888. In 1908 it became the Medical Department of the University of California in Los Angeles. In 1909 the College of Physicians and Surgeons, established in 1904, became the Medical Department of the University of Southern California. Its activities were suspended in 1920; reorganized in May 1928, under present title. The faculty consists of 129 professors and 113 instructors, assistants and others, a total of 242. A fifth intern year is required. Three years of collegiate work is required for admission. Coeducational since organization. Annual fees amount to $450. The total registration for 1933-1934 was 171; graduates, 30. The next session begins Sept. 24, 1934, and ends June 12, 1935. The Dean is Paul S. McKibben, Ph.D.

San Francisco

STANFORD UNIVERSITY SCHOOL OF MEDICINE, 2398 Sacramento Street, San Francisco.—Organized in 1908, when, by agreement, the interests of Cooper Medical College were taken over. The first class was graduated in

1913. Coeducational since organization. The faculty consists of 107 professors and 142 lecturers, assistants and others, a total of 249. Three years of collegiate work is required for admission. The course covers four years of eight and one-half months each, plus a fifth year of intern work. The fees for the four years, respectively, are $467, $444, $361 and $361. The total registration for 1933-1934 was 210; graduates, 41. The twenty-fifth session begins Oct. 2, 1934, and ends June 12, 1935. The Dean is Loren Roscoe Chandler, M.D.

COLORADO

Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged, Jan. 1, 1911. Coeducational since organization. The faculty is composed of 57 professors and 130 lecturers, instructors and assistants, a total of 187. The course covers four years of nine months each. The entrance requirements are three years of collegiate work. The fees for residents of Colorado, for each of the four years are, respectively, $211, $231, $181 and $191. Nonresidents are charged $132 additional each year. The total registration for 1933-1934 was 206; graduates, 51. The fifty-third session begins Sept. 24, 1934, and ends June 10, 1935. The Dean is Maurice H. Rees, M.D.

CONNECTICUT

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 333 Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. Coeducational since 1916. The faculty consists of 108 professors and 174 lecturers and assistants, a total of 282. The requirements for admission are three years of collegiate work plus completion of courses in physics, inorganic chemistry, qualitative analysis, general biology, organic chemistry and physical chemistry or laboratory physics, all equivalent to the courses in these subjects in Yale University. The student also must have two years of French or German. The course covers four years of nine months each. The fees for the four years, respectively, are $505, $500, $500 and $520. The total registration for 1933-1934 was 209; graduates, 40. The one hundred and twenty-second session begins Sept. 24, 1934, and ends June 12, 1935. The Dean is Milton C. Winternitz, M.D.

DISTRICT OF COLUMBIA

Washington

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 3900 Reservoir Road, N.W.—Organized 1851. First class graduated in 1852. The faculty is composed of 50 professors, 165 instructors and assistants; total, 215. Three years of collegiate work is required for entrance. The course of study covers four terms of eight and one-half months each. The present fees for each of the four sessions, respectively, are $465, $460, $410 and $410. The total registration for 1933-1934 was 546; graduates, 154. The eighty-fourth session begins Sept. 10, 1934, and ends June 10, 1935. The Dean is William Gerry Morgan, M.D.

GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, 1335 H Street, N.W. — Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an act of Congress, the title of George Washington University was granted to the institution. Coeducational since 1884. The faculty is composed of 50 professors and 108 instructors, demonstrators and assistants, a total of 158. Two years of collegiate work is required for admission. The course covers four years of thirty-two weeks each. The fees for the four years, respectively, are $500 each year. The total registration for 1933-1934 was 294; graduates, 70. The one hundred and tenth session begins Sept. 19, 1934, and ends June 1, 1935. The Dean is Earl B. McKinley, M.D.

HOWARD UNIVERSITY COLLEGE OF MEDICINE, Fifth and W streets, N.W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Coeducational since organization. Negro students compose a majority of those in attendance. The faculty comprises 30 professors and 63 lecturers and assistants, 93 in all. The admission requirements are at least two years of collegiate work, including physics, chemistry, botany and zoology, English and French or German. The course covers four years of thirty-three weeks each. The fees for each of the four sessions, respectively, are $269, $269, $259 and $266. Registration for 1933-1934 was 205; graduates, 47. The sixty-seventh session begins Sept. 24, 1934, and ends June 7, 1935. The Dean is Numa P. G. Adams, M.D.

GEORGIA

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 50 Armstrong Street and Druid Hills.—Organized in 1854 as the Atlanta School of Medicine. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Two years of collegiate work is required for admission. The faculty consists of 19 professors and 168 associates and assistants, a total of 187. The course of study is four years of thirty-two weeks each. The fees for each of the four years are $300. Total registration for 1933-1934 was 225; graduates, 60. The next session begins Oct. 1, 1934, and ends June 10, 1935. The Dean is Russell H. Oppenheimer, M.D.

Augusta

UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia, the name being changed July 1, 1933, to University of Georgia School of Medicine. Property transferred to university in 1911. Classes were graduated in 1833 and all subsequent years except 1862 and 1863. Coeducation was begun in 1920. The faculty includes 41 professors and 26 assistants, 67 in all. Two years of collegiate work is required for admission. The course is four years of thirty-four weeks each. The fees for each of the four years are $185 for residents of Georgia, and $365 each year for nonresidents. The total registration for 1933-1934 was 153; graduates, 39. The one hundred and sixth session begins Sept. 24, 1934, and ends June 10, 1935. The Vice Dean is G. Lombard Kelly, M.D.

NOTE.—Action of the Council on Medical Education and Hospitals, Feb. 11, 1934: *Resolved*, That approval of the University of Georgia School of Medicine be withdrawn at this time with the provision that this decision will not prejudice the transfer of the students now enrolled to class A medical schools at the end of the college session.

Action of the Council, June 10, 1934: *Resolved*, That in the resolution adopted in February 1934 the provision regarding transfer of students be amended so as to include those enrolled for the session of 1934-1935.

ILLINOIS

Chicago

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Lincoln Street.—Incorporated in 1915 as the Bennett Medical College, and operated as an organic part of Loyola University, by virtue of an agreement entered into with the trustees of Bennett Medical College. Present title assumed in 1917. The Chicago College of Medicine and Surgery was purchased in 1917. The first class graduated in 1916. Coeducational. Two years of collegiate work is required for admission. The course of study is five years, including an internship in a hospital. The faculty is composed of 55 professors and 235 assistants, lecturers, instructors and others, a total of 290. The fees for each year are $371, $407, $334 and $298, respectively. The total enrolment for 1933-1934 was 460; graduates, 89. The next session begins Sept. 24, 1934, and ends June 15, 1935. The Dean is Louis D. Moorhead, M.D.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869 but retained the name of Chicago Medical College until 1891, when the present title was taken. Became an integral part of Northwestern University in 1905. Coeducational since 1926. The faculty comprises 127 professors and 283 lecturers and assistants, a total of 410. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University, plus three years of collegiate work, including courses in physics, chemistry, biology and a foreign language. The course covers four years of eight months each and a fifth year spent in an approved hospital as an intern or in other practical work. The total fees are $365 each year. The total registration for 1933-1934 was 548; graduates, 166. The seventy-sixth session begins Oct. 2, 1934, and ends June 17, 1935. The Dean is Irving S. Cutter, M.D.

UNIVERSITY OF CHICAGO, RUSH MEDICAL COLLEGE, 1758 West Harrison Street.—Chartered in 1837; held first class in 1843. First class graduated in 1844. In 1887 the college became the medical department of Lake Forest University, retaining, however, its self-government. This relation was dissolved in April, 1898, and in the same month affiliation with the University of Chicago was established. Coeducational since 1898. Since that time the work of the first two years has been given on the University Quadrangles. In May, 1924, by a new contract, the University of Chicago took over the work of Rush Medical College as a department of the university. Thereafter only clinical work has been offered by Rush Medical College. Since 1914 the course has included a fifth year consisting of a hospital internship or of a fellowship in one of the departments. Three years of collegiate work is required for admission. The year is divided into four quarters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. The faculty is composed of 130 professors, 148 associates, instructors and others, a total of 278. The fee for the third year is $391, and for the fourth, $411. Total registration for 1933-1934 was 328; graduates, 148. The ninetieth session begins Oct. 1, 1934, and ends June 11, 1935. The school is in session all year except the month of September. The Dean is Ernest E. Irons, M.D.

UNIVERSITY OF CHICAGO, THE SCHOOL OF MEDICINE OF THE DIVISION OF THE BIOLOGICAL SCIENCES, Fifty-Eighth Street and Ellis Avenue.—Organized in 1924. The work of the first two years of the medical course has been given on the Quadrangles since 1899, in cooperation with Rush Medical College, and that of the third and fourth clinical years was added in 1924 with the organization of this medical school and the construction on the Quadrangles of the university hospitals and clinics. Coeducational. A fifth year, spent in successful internship in an approved hospital or in advanced work in some branch of medical science, is required for the degree of M.D. The faculty is composed of 98 professors, 132 associates, instructors and others, a total of 230. The requirements for admission are three years of collegiate work. The year is divided into four quar-

ters of twelve weeks each; the completion of the work of three of these quarters gives credit for a college year. Students are admitted at the beginning of the autumn quarter. The tuition fees for each of the four years are $375. Total registration for 1933-1934 was 325; graduates, 19. The next session begins Oct. 1, 1934, and ends June 12, 1935. The Dean of Medical Students is B. C. H. Harvey, M.D.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 1853 West Polk Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897. Relationship with the university was canceled in June, 1912, and was restored in March, 1913, when the present title was assumed. Coeducational since 1898. Two years of collegiate work is required for admission. The curriculum covers four years of thirty-two weeks each, and a year of internship in an approved hospital. The faculty is composed of 112 of professional rank and 250 assistants and instructors, a total of 362. The tuition is $200 a year for students who are residents of Illinois; $300 a year for nonresident students. The total registration for 1933-1934 was 640; graduates, 115. The fifty-third session begins Oct. 1, 1934, and ends June 7, 1935. The Dean is David John Davis, M.D.

INDIANA

Bloomington-Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1903 but did not give all the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana (organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879) merged into it. The first class was graduated in 1908. Coeducational since organization. The faculty consists of 270 professors, lecturers, associates and assistants. Two years of collegiate work is required for admission. The work of the first year is given at Bloomington and the work of the next three years at Indianapolis. The regular fee for the medical course at Bloomington is $205 a year for residents of Indiana, $410 for nonresidents. The regular fee for the medical course at Indianapolis for students now enrolled and in residence is $175 a year for residents of Indiana, and $350 for nonresidents. The total registration for 1933-1934 was 465; graduates, 116. The next session begins Sept. 18, 1934, and ends June 17, 1935. The Dean at Bloomington is Burton D. Myers, M.D., and the Dean at Indianapolis is Willis Dew Gatch, M.D.

IOWA

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. Coeducational since 1870. The faculty is made up of 46 professors, 63 lecturers, demonstrators and assistants, a total of 109. Two years of collegiate work, including courses in physics, chemistry, biology, German and English, is required for admission. The course of study covers four years of thirty-four weeks each. The tuition fee is $192 each year for residents of Iowa and $456 for nonresidents. Total registration for 1933-1934 was 353; graduates, 72. The sixty-fifth session begins Sept. 24, 1934, and ends June 3, 1935. The Chairman of the Administrative Committee is John Thomas McClintock, M.D.

KANSAS

Lawrence-Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE.—Organized in 1880. It offered only the first two years of the medical course until 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. Absorbed Kansas Medical College in 1913. First class graduated in 1906. The clinical courses are given at Kansas City. Coeducational since 1880. The faculty includes 56 professors and 130 instructors, assistants and others, a total of 186. The requirement for admission is two years of collegiate work. The course covers four years of nine months each. The total fees for residents of the state for each of the four years are, respectively, $147, $139, $117.50 and $120. For nonresidents the fees are $212, $204, $205, $207. The total registration for 1933-1934 was 300; graduates, 68. The fifty-fifth session begins Sept. 20, 1934, and ends June 10, 1935. The Dean is H. R. Wahl, M.D., Kansas City.

KENTUCKY

Louisville

UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, First and Chestnut streets.—Organized in 1837 as Louisville Medical Institute. The first class graduated in 1838, and a class graduated each subsequent year except 1863. In 1846 the name was changed to University of Louisville Medical Department. In 1907 it absorbed the Kentucky University Medical Department; in 1908, the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. In 1922 it changed its name to the University of Louisville School of Medicine. Coeducational since organization. Two years of collegiate work is required for admission. The faculty numbers 67 professors and 77 assistants, instructors and others, a total of 144. Course covers four years of thirty-two weeks each, exclusive of vacations and examinations. Fees for four years are, respectively, $369, $369, $374 and $384. Total registration for 1933-1934 was 348; graduates, 94. Next session begins Sept. 13, 1934, and ends June 1, 1935. The Dean is John Walker Moore, M.D.

LOUISIANA

New Orleans

LOUISIANA STATE UNIVERSITY MEDICAL CENTER, 1532 Tulane Avenue.—Organized January, 1931. Coeducational. First session October, 1931, with students of first and third years. Faculty comprises 32 professors and 117 assistant professors, instructors and assistants, a total of 149. Course covers four years of no less than 32 weeks each and one year of general rotation or laboratory internship in approved hospital. A minimum of two years' collegiate work is required for admission. Beginning with the session 1935-1936 a minimum of three years' collegiate work will be required for admission. Total fees, $92 each year for residents of Louisiana; additional tuition of $300 each year for nonresidents. Total registration for 1933-1934 was 210. The fourth session begins Sept. 19, 1934, and ends June 1, 1935. The Dean is Arthur Vidrine, M.D.

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, 1430 Tulane Avenue.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1863-1865, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847, and became the Medical Department of the Tulane University of Louisiana in 1884. Present title in 1913. Coeducational since 1915. The faculty comprises 35 professors and 125 associate and assistant professors, instructors and assistants, a total of 160. The course covers four years of thirty-two weeks each. Two years of collegiate work is required for admission. Total fees for each of the four years, respectively, are $350, $340, $325 and $355. The total registration for 1933-1934 was 496; graduates, 123. The one hundred and one session begins Sept. 28, 1934, and ends June 12, 1935. The Dean is Charles Cassedy Bass, M.D.

MARYLAND

Baltimore

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, Washington and Monument streets.—Organized in 1887. Offered preliminary course only until 1893. The first class graduated in 1897. Coeducational since organization. The faculty consists of 70 professors and 304 instructors, assistants and others, a total of 374. The requirements for admission demand that the applicant possess a collegiate degree and have a knowledge of French and German (two years each of college instruction), physics and biology, such as may be obtained from a year's course, and a two years' course in chemistry. The course extends over four years of eight and one-half months each. The total fees for each year are, respectively, $611, $610, $610 and $610. Total registration for 1933-1934 was 284; graduates, 73. The forty-second session begins Oct. 2, 1934, and ends June 11, 1935. The Dean is Alan M. Chesney, M.D.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Greene streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged into it in 1913. In 1915 the College of Physicians and Surgeons of Baltimore was merged and the present name assumed. Coeducational since 1918. The faculty consists of 101 professors and 150 instructors and assistants, a total of 251. Two years of collegiate work is required for admission. The course covers four years of eight months each. The fees for the four years, respectively, are $410, $400, $400 and $415 for residents of the state; for nonresidents the fees are $175 additional each year. Total registration for 1933-1934 was 444; graduates, 103. The one hundred and twenty-seventh session begins Sept. 21, 1934, and ends June 1, 1935. The Dean is J. M. H. Rowland, M.D.

MASSACHUSETTS

Boston

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873 as a homeopathic institution. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class was graduated in 1874. Became nonsectarian in 1918. Coeducational since organization. Three years of collegiate work is required for admission. The faculty includes 22 professors, 153 associates and others, a total of 175. The course covers four years. Total fees for each of the four years, respectively, are $426, $421, $421, and $406. Total registration for 1933-1934 was 246; graduates, 53. The sixty-second session begins Sept. 20, 1934, and ends June 10, 1935. The Dean is Alexander S. Begg, M.D.

HARVARD UNIVERSITY MEDICAL SCHOOL, 25 Shattuck Street.—Organized in 1782. The first class graduated in 1788. It has a faculty of 136 professors and 359 other instructors and assistants, a total of 495. Candidates for admission must present a college degree. The college work must include a year of physics, biology, general chemistry, organic chemistry, and a reading knowledge of French or German. The total fee for each of the four years is $400, plus $5 the first year for matriculation. The total registration for 1933-1934 was 516; graduates, 132. The one hundred and fifty-second session begins Sept. 24, 1934, and ends June 20, 1935. The Dean is David L. Edsall, M.D.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. Coeducational since 1894. It has a faculty of 65 professors and 240 assistants, lecturers and others, a total of 305. A bachelor's degree is required for admission. The course covers four years of eight months each. The total fees for each of the four years are $412, $407, $407 and $417. Total registration for 1933-1934 was 468; graduates, 101. The thirty-ninth session begins Sept. 26, 1934, and ends June 17, 1935. The Dean is A. Warren Stearns, M.D.

MICHIGAN

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since 1870. It has a faculty of 26 professors, 13 associate professors, 28 assistant professors, 152 assistants, instructors and lecturers; a total of 219. The entrance requirements are ninety semester hours. The curriculum covers four years of nine months each. The total fees for Michigan students are $200, $205, $205 and $202 for each of the four years, respectively, plus a matriculation fee of $10; for nonresidents, $100 a year additional. The matriculation fee for nonresidents is $25. The total registration for 1933-1934 was 451; graduates, 98. The eighty-fifth session begins Sept. 24, 1934, and ends June 17, 1935. The Dean is F. G. Novy, M.D.

Detroit

WAYNE UNIVERSITY COLLEGE OF MEDICINE, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with the title of Detroit College of Medicine and Surgery in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. In 1934 the name was changed by the action of the Detroit Board of Education to Wayne University College of Medicine, as a part of the program of consolidation of the Detroit City Colleges into a university system. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined degree" guaranteed by school of arts and sciences. The faculty consists of 33 professors, 101 lecturers and others, a total of 134. The course covers four years of nine months each and a fifth hospital intern year. The total fees for each of the first four years are, for Detroit residents, $283; for nonresidents who reside in Michigan, $383, and for nonresidents from outside the state, $408. For the fifth or intern year the resident student fee is $50; the nonresident fee is $85. The total registration for 1933-1934 was 324; graduates, 66. The fiftieth session begins Sept. 27, 1934, and ends June 21, 1935. The Dean is W. H. McCracken, M.D.

MINNESOTA

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. Coeducational since organization. The faculty includes 87 professors and 216 instructors, a total of 303. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are two years of university work, which must include six semester credits of rhetoric, eight semester credits of physics; thirteen credits of general chemistry, qualitative and quantitative analysis and organic chemistry, eight credits of zoology, and a reading knowledge of scientific German, with a "C" average in all subjects and in the sciences. Students are required to meet the requirements for a degree of B.S. or B.A. before receiving the degree of Bachelor of Medicine (M.B.) which is granted at the end of the four-year course. The M.D. degree is conferred after a year of intern work, of advanced laboratory work, or of public health work has been completed. Students are graduated at the end of any quarter in which work is completed and examinations passed. Most students graduate in March or June. Total fees are $243 for residents and $318 for nonresidents, each year of three quarters. The total registration for 1933-1934 was 514; graduates, 114. The forty-sixth session begins Oct. 1, 1934, and ends June 17, 1935. The Dean is Elias P. Lyon, Ph.D.; Dean of Medical Sciences, Richard E. Scammon, Ph.D.

MISSISSIPPI

University

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Coeducational since organization. Gives only the first two years of the medical course. A clinical department was established at Vicksburg in 1908 but was discontinued in 1910 after graduating one class. The session extends over eight and one-half months. Entrance requirement is three years of collegiate work. The faculty members, eight professors, one assistant professor and nine instructors, assistants and others, a total of eighteen. The total fees for the first year are $304, and for the second year, $311. The nonresident fee is $50 additional per year. The total registration for 1933-1934 was 51. The thirty-second session begins Sept. 21, 1934, and ends June 3, 1935. The Dean is P. L. Mull, M.D.

NOTE.—Action of the Council on Medical Education and Hospitals, Sept. 22, 1933: *Resolved*, That the University of Mississippi School of Medicine be placed on probation until July 1, 1934, and that the freshmen enrolled for the session 1933-1934 be recognized.

MISSOURI

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855 but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909 Coeducational since 1872. The faculty includes 13 professors and 13 assistant professors, lecturers and others, a total of 26. The entrance requirements are 90 semester hours of collegiate work, including French or German, 8 hours; general zoology, 8 hours; physics, 8 hours; inorganic chemistry, 8 hours; organic chemistry, 5 hours, and general bacteriology, 3 hours. Total fees for the first year are $177; for the second, $200. Nonresidents of the state pay $25 per semester extra. Total registration for 1933-1934 was 80. The next session begins Sept. 10, 1934, and ends June 5, 1935. The Dean is Dudley S. Conley, M.D.

St. Louis

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Boulevard.—Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical School of St. Louis University in 1903. The faculty is composed of 80 professors and 232 instructors and assistants, a total of 312. The requirement for admission is a qualitative standard of two years of collegiate study in the customary subjects, but applicants presenting meritorius credit in excess of the two year minimum are accepted by preference. The curriculum covers four years of thirty-two weeks each. The summer is optional and offers courses academically equivalent to those in the regular session. The total fees for the four years, respectively, are $405, $400, $400 and $435. The total registration for 1933-1934 was 518; graduates, 108. The next session begins Sept. 19, 1934, and ends June 1, 1935. The Dean is Alphonse M. Schwitalla, S.J., Ph.D.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. The first class graduated in 1843. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. Coeducational since 1918. The faculty comprises 107 professors and 188 lecturers, instructors and others, a total of 295. Four years of collegiate work is required for admission, including courses in English, physics, chemistry and biology, and a reading knowledge of German or French. The course is four years of eight months each. The total fees for the four years are, respectively, $424, $419, $419 and $424. The total registration for 1933-1934 was 343; graduates, 91. The next session begins Sept. 27, 1934, and ends June 11, 1935. The Dean is W. McKim Marriott, M.D.

NEBRASKA

Omaha

CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, 306 North Fourteenth Street.—Organized in 1892 as the John A. Creighton Medical College. The first class graduated in 1893. Present title in 1921. Coeducational since organization. It has a faculty of 66 professors and 73 instructors, lecturers and assistants, a total of 139. Two years of collegiate work is required for admission. The curriculum covers four years of eight months each. The total fees each year for the four years are, respectively, $393, $393, $348 and $356. Total registration for 1933-1934 was 298; graduates, 69. The fifty-third session begins Sept. 20, 1934, and ends June 6, 1935. The Dean is Bryan M. Riley, M.D.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The instruction of the first two years was given at Lincoln and of the last two at Omaha until 1913, when the work of all four years was transferred to Omaha. Coeducational since 1882. The faculty is composed of 63 professors and 54 lecturers and instructors, a total of 117. Sixty-five semester hours of collegiate work is required for admission, including courses in physics, chemistry and zoology. The fees for each of the four years, respectively, are $219, $214, $214 and $214. Total registration for 1934-1935 was 340; graduates, 85. The next session begins Sept. 24, 1934, and ends June 10, 1935. The Dean is C. W. M. Poynter, M.D.

NEW HAMPSHIRE

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Clinical teaching was discontinued in 1914. The faculty consists of 15 professors and 10 instructors, a total of 25. Three years of collegiate work is required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The fees for the first year are $410 and $400 for the second year. The total registration for 1933-1934 was 41. The next session begins Sept. 20, 1934, and ends June 18, 1935. The Dean is John P. Bowler, M.D.

NEW YORK

Albany

ALBANY MEDICAL COLLEGE, 47 New Scotland Avenue.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915, Union University assumed educational control. Coeducational since 1915. The faculty is composed of 27 professors and 124 instructors, assistants and others, a total of 151. Three years of collegiate work, including college courses in physics, chemistry (including inorganic, organic and analytic), biology, English, and a modern foreign language, is required for admission. The curriculum covers four years of eight months each. The total fees for the four years, respectively, are $430, $405, $405 and $405. The total registration for 1933-1934 was 109; graduates, 20. The one hundred and fourth session begins Sept. 24, 1934, and ends June 10, 1935. The Dean is Thomas Ordway, M.D.

Brooklyn

LONG ISLAND COLLEGE OF MEDICINE, 350 Henry Street.—Organized in 1858 as the Long Island College Hospital. The first class graduated in 1860 and the last class in 1930. Reorganized with a new charter in 1930 as the present institution. The first class graduated in 1931. Coeducational. It has a faculty of 119 professors and 175 assistants, instructors and others, a total of 294. Seventy-two semester hours of collegiate work, including college courses in physics, chemistry and biology, is required for admission. The course covers four years of eight months each. The total fees for each of the four years are, respectively, $535, $545, $525 and $555. Total registration for 1933-1934 was 431; graduates, 111. The fourth session begins Oct. 1, 1934, and ends June 4, 1935. The Dean is Adam M. Miller, A.M.

Buffalo

UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, 24 High Street.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. Coeducational since organization. The faculty is composed of 85 professors and 153 associates, assistants and others, a total of 238. Two years of collegiate work, including college courses in physics, chemistry, biology, English and French or German, is required for admission. The course covers four years of eight months each. The total fees for each of the four years are, respectively, $530, $525, $520 and 530. Total registration for 1933-1934 was 284; graduates, 63. The eighty-ninth session begins Oct. 1, 1934, and ends June 12, 1935. The Dean is Edward W. Koch, M.D.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street.—The medical faculty of Columbia College, then known as King's College, was organized in 1767. Instruction was interrupted by the War of the Revolution. The faculty was reestablished in 1792 and merged in 1814 with the College of Physicians and Surgeons, which had received an independent charter in 1807. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. This merger became permanent by legislative enactment in 1891. Columbia College became Columbia University in 1896. The medical school has been coeducational since 1917. The faculty is composed of 189 professors and 526 instructors, demonstrators and others, a total of 715. Three years of collegiate work including courses in physics, chemistry, biology and English constitutes the minimum requirement for admission. The work covers four years of eight months each. The total fees for the four years, respectively, are $545, $530, $530 and $550. Total registration for 1933-1934 was 414; graduates, 99. The one hundred and twenty-seventh session begins Sept. 26, 1934, and ends June 4, 1935. The Dean is Willard C. Rappleye, M.D.

CORNELL UNIVERSITY MEDICAL COLLEGE, York Avenue and Sixty-Ninth Street.—Organized in 1898. The work of the first year may be taken either in Ithaca or New York. Coeducational since organization. The faculty is composed of 118 professors and 267 assistants, lecturers, instructors and others, a total of 385. All candidates for admission must be graduates of approved colleges or scientific schools or seniors of approved colleges that will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the bachelor degree on the completion of the first year's work. The candidate must also have a knowledge of physics, chemistry, biology, English and a modern language. The fees for each of the four years are, respectively, $510, $500, $510 and $525. Total registration for 1933-1934 was 271; graduates, 56. The thirty-seventh session begins Sept. 24, 1934, and ends June 6, 1935. The Director is G. Canby Robinson, M.D.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND FLOWER HOSPITAL, 450 East Sixty-Fourth Street.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869; present title in 1908. The first class graduated in 1861. Coeducational since 1919. Two years of collegiate work is required for admission. The course covers four years of eight months each. It has a faculty of 53 professors and associate professors, 17 assistant professors and 121 lecturers and assistants, a total of 191. The total fees for the four years are, respectively, $540, $530, $530 and $560. Total registration for 1933-1934 was 326; graduates, 72. The seventy-fifth session begins Sept. 17, 1934, and ends June 4, 1935. The Dean is Claude A. Burrett, M.D.

NEW YORK UNIVERSITY, UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, 477 First Avenue.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. First class graduated in 1899. Coeducational since 1919. The faculty is composed of 123 professors, associate, assistant, clinical and assistant clinical professors, and 272 lecturers, instructors and others, a total of 395. The course covers four years. Entrance requirements are that all candidates must be graduates of approved colleges or scientific schools, or seniors in good standing in approved colleges or scientific schools on condition that their faculty will permit them to substitute the first year in University and Bellevue Hospital Medical College for the fourth year of their college course and will confer the bachelor's degree on the satisfactory completion of the year's work. The fees for the four years, respectively, are $547, $538, $527 and $565. Total registration for 1933-1934 was 522; graduates, 108. The next session begins Sept. 12, 1934, and ends June 12, 1935. The Dean is John Wyckoff, M.D.

Rochester

UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE, Elmwood Avenue and Crittenden Boulevard.—Organized in 1925 as the Medical Department of the University of Rochester. Coeducational since organization. The faculty is composed of 49 professors, 158 lecturers, assistants, instructors and others, a total of 207. The work embraces a graded course of four years of nine months each. Three years of collegiate work is required for admission. The total fees for each year are $400. The total registration for 1933-1934 was 181; graduates, 46. The tenth session begins Sept. 17, 1934, and ends June 17, 1935. The Dean is George Hoyt Whipple, M.D.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 309-311 South McBride Street.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Coeducational since organization. The faculty is composed of 43 professors and 138 associate and assistant professors, lecturers and instructors, a total of 181. Two years of a recognized college course is required for admission. The course covers four years of thirty-four weeks each. The fee for each of the first three years is $500; for the fourth year, $510. The total enrolment for 1933-1934 was 201; graduates, 52. The sixty-fourth session begins Sept. 27, 1934, and ends June 3, 1935. The Dean is H. G. Weiskotten, M.D.

NORTH CAROLINA

Chapel Hill

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Coeducational since 1914. Two years of collegiate work is required for admission. The faculty is composed of 12 professors and 4 instructors, a total of 16. The fees for each year are $250 for residents; nonresidents, an additional fee of $100. The total registration for 1933-1934 was 66. The forty-ninth session begins Sept. 20, 1934, and ends June 11, 1935. The Dean is C. S. Mangum, M.D.

Durham

DUKE UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1925. The first class was admitted, Oct. 1, 1930. Coeducational. The faculty is composed of 10 professors and 60 associate and assistant professors, lecturers, instructors and assistants, a total of 70. The entrance requirements are seventy hours of collegiate work, including two years each of chemistry and English, and one year each of biology, physics and mathematics. The academic year consists of four quarters of eleven weeks each. Students may either study four quarters each year, and if satisfactory will receive the M.D. certificate after three calendar years, or three quarters in each year, and if satisfactory be graduated after four calendar years. The object of utilizing the summer quarters is to provide more time for longer postgraduate intern training. Duke University will grant the degree of Bachelor of Science to students who have completed satisfactorily seventy semester hours in Duke University or some other approved university, six quarters in the Duke University School of Medicine, creditable extra work, and have written an acceptable thesis. Students are urged to spend three years in hospital or laboratory work after graduation and must give assurance satisfactory to the executive committee that they will spend at least two years. The fees are $450 for each year of three quarters. Total registration for 1933-1934 was 193; graduates, 33. The fifth session begins Oct. 1, 1934, and ends Aug. 31, 1935. The Dean is Wilburt C. Davison, M.D.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICINE.—Organized in 1902. The faculty numbers 6 professors and 8 assistants, a total of 14. Sixty semester hours of collegiate work is required for admission. Only the first two years of the medical course is offered. After the completion of freshman and sophomore college work and two years of medicine, a certificate will be given. The B.S. degree in medicine will be given only after completion of three years of college work and two years of medicine. Each annual course extends over nine months. The fees for the first year are $220 and $225 for the second year. The total registration for 1933-1934 was 62. The thirty-third session begins Sept. 11, 1934 and ends May 30, 1935. The Dean is Thurman D. Kitchin, M.D.

NORTH DAKOTA

Grand Forks

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1905. Offers only the first two years of the medical course. Coeducational since organization. Three years' work in a college of liberal arts is required for admission. The faculty consists of 5 professors and 8 instructors, a total of 13. The fees are $75 each year for resident students and $165 for nonresidents. The total registration for 1933-1934 was 69. The twenty-ninth session begins Sept. 18, 1934, and ends June 11, 1935. The Dean is H. E. French, M.D.

OHIO

Cincinnati

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden and Bethesda avenues.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged into the University, when the title of Ohio-Miami Medical College of the University of

Cincinnati was taken. Present title assumed in 1915. Coeducational since organization. Commencing in 1934, candidates for admission to the freshman class must present three years of college preparation of not less than ninety hours (completed in a college of satisfactory standing). The faculty consists of 117 professors and 196 associates, assistants, etc., a total of 313. The course covers four years of eight months each. A year's internship in an approved hospital is also required. The total fees for the four years are, respectively, $360, $370, $360 and $380, and if not legal citizens of Cincinnati, $50 additional. The total registration for 1933-1934 was 309; graduates, 71. The next session begins Sept. 24, 1934, and ends June 7, 1935. The Dean is Arthur C. Bachmeyer, M.D. Alfred Friedlander, M.D., will assume deanship Sept. 15, 1934.

Cleveland

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 2109 Adelbert Road.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1844. It assumed the present title in 1881. In 1910 the Cleveland College of Physicians and Surgeons was merged. Coeducational since 1919. The faculty includes 64 professors and 163 lecturers, assistants and others, a total of 227. The curriculum covers three years of eight and one-half months each and one year of nine months. Graduation from an approved college or scientific school or equivalent, following completion of a course of at least three collegiate years, is required for admission. The total fees for each of the four years are, respectively, $442, $435, $415 and $425. The total registration for 1933-1934 was 273; graduates, 53. The ninety-second session begins Sept. 13, 1934, and ends June 12, 1935. The Dean is Torald Sollmann, M.D.

Columbus

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Neil and Eleventh avenues.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized in 1847 by charter granted by the State Legislature changing the name from Willoughby Medical College, which was chartered March 3, 1834) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. Coeducational since organization. The faculty consists of 49 professors and assistant professors, 66 lecturers, instructors, demonstrators and others, a total of 115. Three years of collegiate work is required for admission. The course covers four years of thirty-four weeks each. Tuition fees are $246, $231, $231 and $241 each year, respectively, for residents of Ohio, and $150 additional for nonresidents. The total registration for 1933-1934 was 364; graduates, 88. The next session begins Oct. 2, 1934 and ends June 10, 1935. The Dean is J. H. J. Upham, M.D.

OKLAHOMA

Oklahoma City

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course at Norman until 1910, when a clinical department was established at Oklahoma City. The first class graduated in 1911. Coeducational since organization. Since September, 1928, the entire course has been given at Oklahoma City. It has a faculty of 28 professors, 44 associate and assistant professors and 64 instructors, a total of 136. Two years of collegiate work is required for admission. The course covers four years of nine months each. An optional course of six years is offered for the degree of B.S. and M.D. The total fees for the four years are, respectively, $128, $95, $23 and $25. For students residing outside the state of Oklahoma there is an additional fee of $200 a year. The total registration for 1933-1934 was 243; graduates, 61. The thirty-fourth session begins Sept. 17, 1934, and ends June 3, 1935. The Dean is Lewis Jefferson Moorman, M.D.

OREGON

Portland

UNIVERSITY OF OREGON MEDICAL SCHOOL, Marquam Hill.—Organized in 1887. The first class graduated in 1888, and a class graduated each subsequent year except 1898. The Willamette University Medical Department was merged in 1913. Coeducational since organization. It has a faculty of 71 professors and 190 lecturers, assistants and others, a total of 261. Entrance requirements are three years of collegiate work or its equivalent. The course is four years of thirty-three weeks each. The total fees for the four years are, respectively, $260, $255, $250 and $250 for residents of Oregon, and $60 a year additional for nonresidents. The total registration for 1933-1934 was 230; graduates, 56. The forty-eighth session begins Oct. 3, 1934 and ends June 17, 1935. The Dean is Richard B. Dillehunt, M.D.

PENNSYLVANIA

Philadelphia

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 235 North Fifteenth Street.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Entrance requirements are a completed course in a standard secondary school and in addition two years devoted to a college course including English and either French, German or Spanish, physics, chemistry and biology. It has a faculty of 76 professors and 125 lecturers, instructors and others, in all, 201. The work covers four years of eight and one-half months each. Fees for each of the four years are, respectively, $455, $427, $427 and $450. The total registration for 1933-1934 was 470; graduates, 95. The eighty-seventh session begins Oct. 1, 1934, and ends June 13, 1935. The Dean is William A. Pearson, Ph.C.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, 1019 Walnut Street.—Organized in 1825 as the Medical Department of Jefferson College, Canonsburg, Pa. It was chartered with its present title in 1838. Classes have been graduated annually beginning 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 62 professors, associate and assistant professors and 177 associates, lecturers, demonstrators and instructors, a total of 239. Entrance requirements are a completed standard four-year high school college preparatory course, or the equivalent, and in addition four years of work leading to a degree in an approved college of arts and science, including specified courses in physics, general and organic chemistry and biology, with laboratory work in each subject. The course of study covers four years of eight and one-half months each. The total fees for the four years, are respectively, $445, $430, $425 and $425. The total registration for 1933-1934 was 567; graduates, 143. The one hundred and tenth session begins Sept. 24, 1934, and ends June 7, 1935. The Dean is Ross V. Patterson, M.D.

TEMPLE UNIVERSITY SCHOOL OF MEDICINE, Broad and Ontario streets.—Organized in 1901. The first class graduated in 1904. Coeducational since organization. The faculty numbers 30 professors and 195 associates, assistants and others, a total of 225. Three years of collegiate work is required for admission. The fees for each of the four years, respectively, are $485, $455, $435 and $455. The total registration for 1933-1934 was 457, graduates, 118. The thirty-third session begins Sept. 26, 1934 and ends June 13, 1935. The Dean is William N. Parkinson, M.D.

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth and Pine streets.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772 and 1775-1779, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. Coeducational since 1914. The faculty consists of 97 professors, associate and assistant professors, and 295 lecturers, associates, instructors and others, a total of 392. Three years of collegiate work is required for admission, including courses in physics, biology or zoology, chemistry, including general inorganic, organic and analytic, English and French or German. The course covers four years of thirty-three weeks each. The tuition fee is $500 each year, with a deposit fee of $15, a student health fee of $10 and a matriculation fee of $5. Total registration for 1933-1934 was 524; graduates, 133. The one hundred and sixty-ninth session begins Sept. 24, 1934, and ends June 19, 1935. The Dean is William Pepper, M.D.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Henry Avenue and Abbottsford Road, East Falls.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 32 professors and 67 assistants, lecturers and others, in all, 99. Entrance requirements effective in September, 1935, are a completed course in a standard secondary school, and in addition three years of collegiate work, including courses in physics, chemistry, biology, English and French or German. The curriculum covers four years of eight months each. Total fees for each of the four years are, respectively, $439, $433, $433 and $455. The total registration for 1933-1934 was 122; graduates, 19. The eighty-fifth session begins Sept. 26, 1934, and ends June 12, 1935. The Dean is Martha Tracy, M.D.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886 as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. Coeducational since 1899. The faculty is composed of 22 professors and 255 associates, assistants and others, 277 in all. Entrance requirements are two years of collegiate work, including English, chemistry (inorganic and organic), physics and biology. The course of study is four years of eight and one-half months each. The total fees for the four years, respectively, are $415, $400, $400 and $410. The total registration for 1933-1934 was 263; graduates, 65. The forty-ninth session begins Sept. 24, 1934, and ends June 5, 1935. The Dean is R. R. Huggins, M.D.

SOUTH CAROLINA

Charleston

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. Coeducational from 1895 to 1912, when privileges for women were withdrawn, being restored in 1917. It has a faculty of 37 professors and 38 lecturers, instructors and others, a total of 75. The course covers four years of eight months each. The minimum requirements for admission are graduation from an approved four-year high school and satisfactory completion of two years of collegiate work. The total fees are $270, $270, $285 and $285 each year, respectively. Fees for nonresidents of state, $420, $420, $435 and $435. Total enrolment for 1933-1934 was 159; graduates, 31. The one hundred and fifth session begins Sept. 27, 1934, and ends June 6, 1935. The Dean is Robert Wilson, M.D.

SOUTH DAKOTA

Vermilion

UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1907. Coeducational since organization. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The faculty numbers 11. The fees are $100 each year for residents and $200 for nonresidents. The total registration for 1933-1934 was 57. The twenty-eighth session begins Sept. 19, 1934, and ends June 10, 1935. The Dean is J. C. Ohlmacher, M.D.

TENNESSEE

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, 847 Union Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee in 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennessee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicians and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. Coeducational since 1911. The faculty includes 83 professors and 110 assistants, instructors and others, a total of 193. Entrance requirements are a high school education and ninety quarter hours of collegiate work. Students taking the two-year premedical course in Knoxville may secure the B.S. and M.D. degrees. The fees are: for the first quarter, $136; second to sixth quarters, $116 each; seventh to ninth quarters, $111 each; tenth to twelfth quarters, $121 each. For residents of the state the charge is reduced $50 each quarter. Total registration for 1933-1934 was 431; graduates, 86. During the academic year 1934-1935 the quarters begin July 11, Sept. 27, Jan. 2 and March 21, and end Sept. 26, Dec. 15, March 20 and June 8. The Dean is O. W. Hyman, Ph.D.

Nashville

MEHARRY MEDICAL COLLEGE, Eighteenth Avenue North and Heffernan Street.—This school was organized in 1876 as the Meharry Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1915. Coeducational since 1876. The faculty is made up of 25 professors and 24 instructors, demonstrators, lecturers and others, 49 in all. Two years' work in a college of liberal arts is required for admission. The curriculum covers four years of thirty-two weeks each. Tuition fees are, respectively, $250, $250, $250 and $260 each year. Total registration for 1933-1934 was 178; graduates, 38. The fifty-ninth session begins Oct. 1, 1934, and ends May 30, 1935. The President is John J. Mullowney, M.D.

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Twenty-First and Edgehill.—This school was founded in 1874. The first class graduated in 1875. Coeducational since September, 1925. The faculty consists of 89 professors and 120 lecturers, instructors, assistants and others, a total of 209. For matriculation, students must be seniors in absentia, who will receive the bachelor degree from their college after having completed successfully at least one year of work in the school of medicine. The course covers four years of nearly nine months each. The total fees for the four years, respectively, are $315, $315, $315 and $320. The total registration for 1933-1934 was 194; graduates, 50. The sixty-first session begins Sept. 26, 1934, and ends June 12, 1935. The Dean is Waller S. Leathers, M.D.

TEXAS

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University. It acquired the charter of Dallas Medical College in 1904. Coeducational since organization. The first class graduated in 1901. The faculty consists of 64 professors and 79 instructors and assistants, a total of 143. Entrance requirements are two years of collegiate work. The course covers four years of eight months each. The fees for each of the four years, respectively, are $362, $347, $332 and $337. Total registration for 1933-1934 was 360; graduates, 64. The thirty-fifth session begins Oct. 1, 1934, and ends May 27, 1935. The Dean is W. H. Moursund, M.D.

Galveston

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B.—Organized in 1891. The first class graduated in 1892. Coeducational since organization. It has a faculty of 42 professors and 15 lecturers and instructors, a total of 57. The curriculum covers four years of eight months each. The entrance requirement is two years of collegiate work. The total fees for the four years, respectively, are $100, $102, $102, $110. There is a matriculation fee of $50 for each year. Total registration for 1933-1934 was 350; graduates, 70. The forty-fourth session begins Oct. 1, 1934, and ends May 31, 1935. The Dean is George E. Bethel, M.D.

UTAH

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE.—Organized in 1906. Coeducational since organization. Gives only first two years of medical course. Each school year covers thirty-six weeks. Three years of collegiate work is required for admission. The medical faculty consists of 7 professors and 15 lecturers and assistants, a total of 22. The fees are $190 for the first year and $200 for the second year. Total registration for 1933-1934 was 70. The twenty-eighth session begins Sept. 24, 1934, and ends June 1, 1935. The Dean is L. L. Daines, M.D.

VERMONT

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. Coeducational since 1920. It has a faculty of 31 professors and 32 lecturers, instructors, preceptors and others, a total of 68. Seventy-two hours of collegiate work is required for admission. The course of study covers four years of nine months each. For residents of Vermont the tuition fee is $300 each session. Nonresidents are charged an additional $75 each session. A student activity fee of $30 is charged all students not holding academic degrees or in attendance four years previously, and a $25 fee for the Doctor's degree. The total registration for 1933-1934 was 170; graduates, 33. The next session begins Sept. 21, 1934, and ends June 24, 1935. The Dean is J. N. Jenne, M.D.

VIRGINIA

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. Coeducational since the session 1920-1921. It has a faculty of 31 professors and 38 lecturers, instructors, assistants and others, a total of 69. The requirements for admission are the completion of a four-year high school course, or its equivalent, and two years of collegiate work devoted to English, mathematics, chemistry, physics and biology. For residents of Virginia the total fees for the four years, respectively, are $377, $355, $330 and $325. Nonresidents are charged an additional $50 each year. The total registration for 1933-1934 was 236; graduates, 52. The one hundred and eleventh session begins Sept. 13, 1934, and ends June 11, 1935. The Dean is J. Carroll Flippin, M.D.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Twelfth and Clay streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Coeducational since 1918. Classes were graduated in 1839 and in all subsequent years. It has a faculty of 66 professors and 80 lecturers, instructors and others, a total of 146. The requirements for admission are a four-year high school education and in addition two years of collegiate work, including courses in physics, chemistry, biology and English. The course covers four years of eight and one-half months each. Total fees for the four years, respectively, are $304, $304, $289 and $319. Nonresidents are charged an additional $100 each year. The total registration for 1933-1934 was 339; graduates, 93. The ninety-seventh session begins Sept. 11, 1934, and ends May 28, 1935. The Dean is Lee E. Sutton Jr., M.D.

WEST VIRGINIA

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902 and gives only the first two years of the medical course. Coeducational since organization. Sixty-six semester hours of collegiate work is required for admission, and the bachelor's degree will be granted to those who finish the two years in medicine. Session extends through nine months. The faculty numbers 11 professors and 14 lecturers, instructors, assistants and others, a total of 25. Fees: for residents of the state, $250 each year; for nonresidents, $400. The total registration for 1933-1934 was 138. The next session begins Sept. 17, 1934, and ends June 11, 1935. The Dean is John N. Simpson, M.D.

WISCONSIN

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, 412 North Charter Street.—Organized in 1907. Gave only first two years of the medical course until 1925, when the clinical years were added. Coeducational since organization. For matriculation, at least two years in a college of arts and science or an equivalent training is required, including one year of Latin, a reading knowledge of French or German, and at least a year's work in physics, chemistry and biology, and a semester's work in organic chemistry. It has a faculty of 64 professors and 67 lecturers, instructors and others, a total of 131. The fees for each year are, respectively, $212, $192, $165 and $110. An additonal fee of $200 is charged for nonresidents. The total registration for 1933-1934 was 317; graduates, 49. The twenty-seventh session begins Sept. 19, 1934, and ends June 17, 1935. The Dean is C. R. Bardeen, M.D.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, 561 North Fifteenth Street.—Organized in December, 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. Coeducational since organization. It has a faculty of 157. The minimum entrance requirements are sixty-four semester hours of collegiate work, including courses in physics, chemistry, biology, and a modern foreign language. The curriculum covers four years of eight and a half months each, and one year's internship in an approved hospital. The fees for the four years, respectively, are $389, $379, $379 and $364. The total registration for 1933-1934 was 302; graduates, 53. The twenty-third session begins Oct. 1, 1934, and ends June 12, 1935. The Dean is Eben J. Carey, M.D.

CANADA

Alberta

UNIVERSITY OF ALBERTA FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Coeducational since organization. Has given the complete six-year medical course since 1924. The faculty includes 9 full time and 60 part time professors, instructors, assistants and others, a total of 69. Fees for first year are $179; for the second, third and fourth years $244; for the fifth and sixth years $274. The registration for 1933-1934 was 180; graduates, 24. The twenty-second session begins Sept. 27, 1934, and ends May 15, 1935. The Dean is Allan Coats Rankin, M.D.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, corner of Emily and Bannatyne Avenue, Winnipeg.—Organized in 1883 as Manitoba Medical College; first class graduated in 1886, and a class graduated

each subsequent year. The college transferred all its property to the University of Manitoba in 1919 and assumed the present title. Coeducational since organization. The faculty includes 36 professors, 87 instructors and assistants, total of 123. The total fees for the five years, respectively, are $270, $265, $275, $275 and $145. Matriculation requirements include two years of collegiate work in the faculty of arts and science of a recognized university subsequent to the complete high school course required for entrance to the latter. The course extends over four years of eight months each and a hospital internship. Total registration for 1933-1934 was 198; graduates, 72. The next session begins Sept. 21, 1934, and ends May 26, 1935. The Dean is A. T. Mathers, M.D.

Nova Scotia

DALHOUSIE UNIVERSITY FACULTY OF MEDICINE, Halifax.—Organized in 1867. Incorporated as the Halifax Medical College in 1875. Reorganized as an examining faculty, separate from the Halifax Medical College, in 1885. In 1911, in accordance with an agreement between the Governors of Dalhousie University and the Corporation of the Halifax Medical College, the work of the latter institution was discontinued and a full teaching faculty was established by the university. By an arrangement between Dalhousie University and the Provincial Medical Board of Nova Scotia, the final professional examinations are conducted conjointly by the university and the board, and candidates may qualify at the same time for their academic degrees and the provincial license. First class graduated in 1872. Coeducational since 1871. It has a faculty of 23 professors and 43 demonstrators, lecturers and others, a total of 66. Requires for matriculation two years of arts. The medical course covers four years and a hospital internship of one year. The fees are $312, $312, $317 and $302 for each year, respectively; $150 additional registration fee payable by students outside the British Empire. The total registration in regular classes for 1933-1934 was 148; graduates, 32. The next session begins Sept. 11, 1934, and ends May 14, 1935. The Dean is H. G. Grant, M.D.

Ontario

QUEEN'S UNIVERSITY FACULTY OF MEDICINE, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the university, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. It admitted women from 1880 until 1883. In 1892 the school again became a part of Queen's University. The faculty numbers 56. The fees for the six years are, respectively, $176, $186, $186, $211, $211 and $241. The last includes the fee of $30 for the M.D., C.M. degrees. The course covers six years of thirty teaching weeks each, the first including courses in physics, chemistry, biology, history or economics or English. The total registration in 1933-1934 was 296; graduates, 44. The next session begins Sept. 27, 1934, and ends May 22, 1935. The Dean is Frederick Etherington, M.D.

UNIVERSITY OF WESTERN ONTARIO MEDICAL SCHOOL, Ottaway Avenue, London.—Organized in 1881 as the Western University Faculty of Medicine; first class graduated in 1883, and a class graduated each subsequent year. Present title in 1923. The medical school has been under the control of the Board of Governors of the University of Western Ontario since 1913. Coeducational since 1913. The faculty numbers 77. Two years of premedical college work, including courses in physics, chemistry and biology, is required for admission to a five year medical course. The total fees to residents of Canada for the last four years, respectively, are $200, $200, $208 and $233. The registration for 1933-1934 was 139; graduates, 24. The next session begins Sept. 26, 1934, and ends June 5, 1935. The Dean is A. B. Macallum, M.D.

UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Organized in 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. In 1902 it absorbed Victoria University, Medical Department, and in 1903 it absorbed the Medical Faculty of Trinity University. Coeducational since 1903. The course of study covers six years of eight months each, the first two being devoted largely to physics, chemistry, biology and cultural courses in history, science and English. It has a faculty of 63 professors and 212 lecturers, associates and others, a total of 275. The fees are $170 for the first year; for the second, $320; $215 for the third year; $215 for the fourth and fifth years, and $243 for the sixth year. The total registration for 1933-1934 was 794; graduates, 106. The next session begins Sept. 25, 1934, and ends May 18, 1935. The Dean is J. G. FitzGerald, M.D.

Quebec

MCGILL UNIVERSITY FACULTY OF MEDICINE, 3640 University Street, Montreal.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-1839, owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. Coeducational since 1919. The course consists of three premedical years, and five medical years of eight months each. The faculty consists of 63 professors and 146 lecturers and others, a total of 209. The total fees for each of the five medical years are $393. The total registration for 1933-1934 was 491; graduates, 80. The next session begins Sept. 19, 1934, and ends May 1, 1935. The Dean is Charles F. Martin, M.D.

UNIVERSITY OF MONTREAL, FACULTY OF MEDICINE, 1265 St. Denis Street, Montreal.—Organized in 1843, incorporated in 1845 as the Montreal School of Medicine and Surgery. In 1891, by act of Parliament, the Medical Faculty of Laval University (organized in 1878) was absorbed. Present name by act of Parliament in 1920. A class was graduated in 1843 and in each subsequent year. Coeducational since 1925. The faculty numbers 118. One year of premedical college work is required for admission to a five year medical course. The total fees for each of the five years, respectively, are $252, $220, $270, $232 and $218. The total registration for 1933-1934 was 186; graduates, 51. The next session begins Sept. 15, 1934, and ends June 15, 1935. The Dean is Télesphore Parizeau, M.D.

LAVAL UNIVERSITY FACULTY OF MEDICINE, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 the Laval University Faculty of Medicine; first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 88. The fees for each of the medical years are $160, $170, $160, $160 and $180 for residents of Canada. Nonresidents are charged an extra fee of $190 each year. One year of premedical college work is required for admission to a five year medical course. Total registration for 1933-1934 was 263; graduates, 43. The next session begins Sept. 11, 1934, and ends May 31, 1935. The Dean is P. C. Dagneau, M.D.

Saskatchewan

UNIVERSITY OF SASKATCHEWAN SCHOOL OF MEDICAL SCIENCES, Saskatoon.—Organized in 1926. Coeducational. Offers the first two years only following a minimum of two years' university work, mainly in physics, chemistry and biology. Students require three more years for graduation, making in all seven years from matriculation. The medical faculty includes 8 professors and 4 lecturers and assistants, a total of 12. The fees are $150 for each year. The total registration for 1933-1934 was 47. The next session begins Sept. 21, 1934, and ends May 10, 1935. The Dean is W. S. Lindsay, M.B.

INSTITUTIONS OFFERING GRADUATE COURSES FOR PHYSICIANS APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

CALIFORNIA

University of California Graduate Division, Berkeley.
Stanford University School of Medicine, San Francisco.

COLORADO

University of Colorado School of Medicine, Denver.

CONNECTICUT

New Haven School of Physical Therapy.
Yale University Graduate School, New Haven.

ILLINOIS

Children's Memorial Hospital, Chicago.
Northwestern University Medical School, Chicago.
University of Chicago, Rush Medical College.
University of Illinois College of Medicine, Chicago.

INDIANA

Indiana University School of Medicine, Indianapolis.

IOWA

State University of Iowa College of Medicine, Iowa City.

KANSAS

University of Kansas School of Medicine, Kansas City.

LOUISIANA

Tulane University Graduate School of Medicine (New Orleans Polyclinic), New Orleans.

MARYLAND

Johns Hopkins University School of Hygiene and Public Health, Baltimore.
Johns Hopkins University School of Medicine, Baltimore.

MASSACHUSETTS

Harvard School of Public Health, Boston.
Harvard Medical School, Boston.
Massachusetts Institute of Technology, Cambridge.

MICHIGAN

University of Michigan Medical School, Ann Arbor.
Wayne University College of Medicine, Detroit.

MINNESOTA

University of Minnesota, Graduate School of Medicine, Minneapolis-Rochester.

MISSOURI

Washington University School of Medicine, St. Louis.

NEW YORK

Albany Medical College.
University of Buffalo School of Medicine.
New York Post-Graduate Medical School and Hospital (Columbia University), New York.
Cornell University Medical College, New York.
New York Eye and Ear Infirmary, School of Ophthalmology and Otology, New York.
New York Polyclinic Medical School and Hospital, New York.
New York University, University and Bellevue Hospital Medical College, New York.
New York State Hospital, Ray Brook.
Trudeau School of Tuberculosis, Saranac Lake.

OHIO

University of Cincinnati College of Medicine.
Western Reserve University Graduate School, Cleveland.
Ohio State University College of Medicine, Columbus.

PENNSYLVANIA

University of Pennsylvania Graduate School of Medicine, Philadelphia.

PUERTO RICO

University of Puerto Rico School of Tropical Medicine (under the auspices of Columbia University, New York), San Juan.

TENNESSEE

Vanderbilt University School of Medicine, Nashville.

WISCONSIN

University of Wisconsin Medical School, Madison.

HOSPITALS APPROVED FOR INTERNSHIPS

By the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago

Revised to Aug. 25, 1934

The following general hospitals containing 211,795 beds are considered in position to furnish acceptable internships for medical graduates.

HOSPITALS, 676. INTERNSHIPS, 6,204

The terms used in the column "Type of Internship" are defined as follows:

1. Rotating internships include services in medicine, surgery, pediatrics, obstetrics and in the clinical and x-ray laboratories.
2. Straight internships are limited to a single field.
3. Mixed internships are those comprising more than one service but which do not include all of the six branches which constitute a rotating internship.

ABBREVIATIONS:

Chrch	Church	Fed	Federal	Indiv	Individual
CyCo	City and county	Frat	Fraternal	Indus	Industrial
Co	County	Indep	Independent hospital association		

Name of Hospital	Location	Control	Capacity	Classification of Patients: Percentage: Free and Part Pay	Classification of Patients: Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
ALABAMA														
Hillman Hospital	Birmingham	Co	475	100		10,974	Mixed	16	12	July	No	Req	31	No
Norwood Hospital	Birmingham	Indep	226	59	41	2,425	Rotating	2	12	July	No	Req	32	$25
Employees' Hospital of the Tennessee Coal, Iron and Railroad Co	Fairfield	Indus	310	1	99	5,433	Rotating	8	12	July	No	Req	31	$25
John A. Andrew Memorial Hosp.[1] (col.)	Tuskegee Institute	Indep	79	81	19	2,215	Rotating	3	12	June & Sept.	No	Req	56	$6
ARIZONA														
St. Joseph's Hospital	Phoenix	Chrch	190	27	73	3,686	Mixed	2	12	July	No	None	37	$25
ARKANSAS														
Baptist State Hospital	Little Rock	Chrch	315	32	68	3,322	Mixed	3	12	July	No	None	29	$50
Little Rock City Hospital	Little Rock	City	140	100		1,959	Rotating	4	12	July	No	Req	30	$35
St. Vincent's Infirmary	Little Rock	Chrch	150	17	83	3,274	Rotating	4	12	June	No	None	15	$25
CALIFORNIA														
Fresno County General Hospital	Fresno	Co	523	100		5,797	Rotating	10	12	July	No	Req	34	$25
Glendale Sanitarium and Hospital[1]	Glendale	Chrch	264	56	44	2,077	Mixed	3	12	July	No	Req	36	$65(a)
Loma Linda Sanitarium and Hospital	Loma Linda	Chrch	124	..	..	1,644	Rotating	4	12	July	(3)	Req	43	$55(a)
Seaside Hospital	Long Beach	Indep	333	..	..	4,658	Mixed	1	12	Aug.	No	Req	21	$25
California Hospital	Los Angeles	Chrch	315	15	85	5,163	Rotating	9	12	July	(4)	Req	27	$25
Cedars of Lebanon Hospital	Los Angeles	Indep	280	27	73	5,974	Rotating	8	12	July	No	Req	35	$25
Hollywood Clara Barton Mem. Hosp.	Los Angeles	Indep	316		100	4,512	Mixed	5	12	July	No	None	41	$25
Los Angeles County Hospital[1]	Los Angeles	Co	3,572	100		36,182	Rotating	104	12&24	(1-a)	No	Op	53	No
St. Vincent's Hospital	Los Angeles	Chrch	250	8	92	3,925	Rotating	3	12	July	No	None	45	$40
Santa Fe Coast Lines Hospital	Los Angeles	Indus	150	65	35	2,342	Rotating	5	12	July	(5)	Req	69	$22.50
White Memorial Hospital[1]	Los Angeles	Chrch	134	70	30	3,297	Rotating	10	12	July	No	Req	30	$50(a)
Alameda County Hospitals	Oakland	Co	1,455	100		9,600	Rotating	24	12	July	(6)	None	36	$25
Orange County Hospital	Orange	Co	282	100		2,938	Rotating	7	12	July	No	Req	36	$15-20
Pasadena Hospital	Pasadena	Indep	211	17	83	4,591	Rotating	4	12	July	(7)	Req	54	$30
Sacramento County Hospital	Sacramento	Co	481	100		10,621	Rotating	10	12	July	No	Req	49	$35
San Bernardino County Charity Hosp.	San Bernardino	Co	320	100		3,226	Rotating	8	12	July	No	Req	50	$25
San Diego County General Hospital	San Diego	Co	672	100		6,535	Rotating	14	12	July	No	Req	43	$15-20
French Hospital	San Francisco	Frat	234	2	98	3,187	Mixed	6	12	July	No	Req	29	$30(b)
Hospital for Children[2]	San Francisco	Indep	279	35	65	3,539	Rotating	10	12	July	No	Req	41	No
Mary's Help Hospital	San Francisco	Chrch	150	32	68	3,194	Rotating	5	12	July	No	Req	34	$25
Mount Zion Hospital[1]	San Francisco	Indep	198	37	63	3,710	Rotating	6	12	June	No	Req	50	$25
St. Luke's Hospital[1]	San Francisco	Chrch	225	19	81	4,327	Rotating	4	12	July	No	Req	31	$15(c)
St. Mary's Hospital	San Francisco	Chrch	325	15	85	5,631	Rotating	5	12	July	No	Req	15	$25
San Francisco Hospital[1]	San Francisco	CyCo	1,408	100		12,542	Rotating	44	12	July	(8)	Req	57	$10
Southern Pacific General Hospital	San Francisco	Indus	400	..	..	4,225	Rotating	14	12	July	(9)	Req	57	$30
Stanford University Hospitals[1] (including Lane Hospital)	San Francisco	Indep	329	51	49	6,364	Straight	13	12	July	No	Req	48	No
University of California Hospital[1]	San Francisco	State	287	..	..	5,053	Straight	20	12	June	(10)	Req	69	No
St. Helena Sanitarium and Hospital	Sanitarium	Chrch	146	..	..	1,442	Mixed	1	12	July	(20)	None	18	$50
Santa Clara County Hospital	San Jose	Co	499	100		10,362	Rotating	8	12	July	No	Req	56	$30
St. Francis Hospital	Santa Barbara	Chrch	100	37	63	1,324	Mixed	2	12	July	No	None	47	$20
Santa Barbara Cottage Hospital	Santa Barbara	Indep	164	..	..	2,426	Rotating	5	12	July	(11)	Req	55	$20
Santa Barbara General Hospital	Santa Barbara	Co	225	100		1,988	Rotating	4	12	July	(12)	None	61	$15
COLORADO														
Boulder-Colorado Sanit. and Hosp.[1]	Boulder	Chrch	107	..	..	1,060	Mixed	1	12	July	No	Req	26	$35
Beth-El General Hospital	Colorado Springs	Chrch	207	43	57	2,479	Mixed	2	12	June	No	Req	25	$15
Colorado General Hospital[1]	Denver	State	178	100		2,936	Rotating	10	12	July & Aug.	No	Req	82	$20
Denver General Hospital	Denver	CyCo	589	100		17,080	Rotating	12	18	Jan. & July	No	Req	20	$30
Mercy Hospital	Denver	Chrch	250	..	..	3,633	Mixed	4	12	July	No	None	27	$25
Presbyterian Hospital	Denver	Chrch	175	14	86	3,899	Mixed	4	12	July	No	None	29	$25
St. Anthony Hospital	Denver	Chrch	219	79	21	3,102	Rotating	3	12	July	No	None	30	$25
St. Joseph's Hospital	Denver	Chrch	225	79	21	3,874	Rotating	4	12	July	No	None	15	$30
St. Luke's Hospital	Denver	Chrch	249	7	93	4,442	Rotating	6	12	July	No.	Req	40	$25
CONNECTICUT														
Bridgeport Hospital	Bridgeport	Indep	400	..	..	7,967	Rotating	8	12	July	No	Req	20	No
St. Vincent's Hospital	Bridgeport	Chrch	251	87	13	4,596	Rotating	6	12	July	(13)	Req	22	$200 yr.
Danbury Hospital	Danbury	Indep	135	78	22	2,360	Mixed	2	12	July	No	None	17	$40
Hartford Hospital	Hartford	Indep	780	63	37	14,015	Rotating	18	18	Jan. & July	No	None	40	No
Municipal Hospital	Hartford	City	310	100		5,774	Rotating	10	24	July	(14)	Req	48	$10
St. Francis Hospital	Hartford	Chrch	525	..	..	8,986	Rotating	9	12	July	No	Req	20	$10
Meriden Hospital	Meriden	Indep	146	93	7	1,909	Rotating	3	12	July	No	Req	27	$30
Middlesex Hospital	Middletown	Indep	160	48	52	2,448	Rotating	2	12	July & Sept.	No	None	24	$10(d)
New Britain General Hospital	New Britain	Indep	241	87	13	3,590	Rotating	5	12	July	No	Req	24	$30
Grace Hospital	New Haven	Indep	286	79	21	4,938	Mixed	9	18	Jan. & July	No	Req	27	...
Hospital of St. Raphael	New Haven	Chrch	250	30	70	5,685	Rotating	6	12	July	No	Req	17	$25
New Haven Hospital[1]	New Haven	Indep	504	88	12	7,902	Straight	26	12-20	(1-b)	No	Req	46	No
Lawrence and Memorial Associated Hospitals	New London	Indep	233	44	56	2,636	Rotating	3	12	July	No	Req	22	$22.50
Norwalk General Hospital	Norwalk	Indep	165	76	24	2,579	Mixed	2	12	Jan. & July	No	None	31	$35(d)
William W. Backus Hospital	Norwich	Indep	155	93	7	2,096	Mixed	2	12	July	No	Req	17	$25
Stamford Hospital	Stamford	Indep	266	19	81	4,395	Rotating	4	12	Jan. & July	No	Req	16	$45
St. Mary's Hospital	Waterbury	Chrch	264	62	38	5,136	Rotating	4	12	July	No	Req	22	$25
Waterbury Hospital	Waterbury	Indep	289	94	6	4,231	Rotating	7	12	July & Oct.	No	Req	34	$25

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free and Part Pay	Classification of Patients Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
DELAWARE														
Delaware Hospital	Wilmington	Indep	200	80	20	4,227	Rotating	5	12	July	No	Req	26	$25
Wilmington General Hospital	Wilmington	Indep	133	45	55	3,057	Rotating	3	12	July	No	Req	29	$30(k)
DISTRICT OF COLUMBIA														
Central Disp. and Emergency Hospital	Washington	Indep	260	34	66	6,556	Mixed	17	12	July	No	Req	32	$10
Freedmen's Hospital [1] (col.)	Washington	Fed	374	85	15	4,385	Rotating	26	12	July & Oct.	No	Req	32	$8.50
Gallinger Municipal Hospital [1]	Washington	City	825	99	1	18,070	Rotating	18	12	July	No	None	53	$9
Garfield Memorial Hospital [1]	Washington	Indep	321	58	42	.....	Mixed	8	12	July	No	Req	30	$10(d)
Georgetown University Hospital	Washington	Indep	261	50	50	4,412	Rotating	8	12	July	No	Req	29	$10
George Washington University Hosp. [1]	Washington	Indep	110	32	68	2,289	Mixed	4	12	July	No	Req	34	$15
Providence Hospital	Washington	Chrch	265	65	35	4,117	Rotating	6	12	July	No	Req	19	$10
St. Elizabeths Hospital [1] Medical and Surgical Departments	Washington	Fed	642	..	..	1,671	Rotating	4	24	July & Oct.	(15)	Req	73	$136.66
Sibley Memorial Hospital	Washington	Chrch	310	..	..	5,464	Rotating	6	12	July	No	Req	29	$20
Washington Sanitarium and Hospital, [1] Takoma Park	Washington	Chrch	180	43	57	1,898	Mixed	2	12	July	No	Req	33	$65(a)
FLORIDA														
Duval County Hospital	Jacksonville	Co	185	100		3,696	Rotating	8	24	July	No	Req	28	$15-30
St. Luke's Hospital	Jacksonville	Indep	175	..	..	2,266	Rotating	3	12	July	No	Req	16	$30
James M. Jackson Memorial Hospital	Miami	City	350	67	33	7,593	Rotating	10	12	July	No	Req	19	$25
Tampa Municipal Hospital [1]	Tampa	City	194	45	55	4,475	Rotating	5	12	July & Oct.	No	Req	26	$25
GEORGIA														
Georgia Baptist Hospital	Atlanta	Chrch	150	23	77	4,455	Rotating	5	12	July	(16)	Op	17	$30
Grady Hospital [1] (White Unit)	Atlanta	City	344	100		8,835	Rotating	22	12	July	No	Req	18	$15
Grady Hospital, Emory University Division (Colored Unit)	Atlanta	City	266	100		8,109	Rotating	12	12	July	No	Req	22	$15
Piedmont Hospital	Atlanta	Indep	135		100	2,039	Rotating	4	12	July	No	None	15	$25
University Hospital [1]	Augusta	City	267	..	..	5,342	Rotating	10	12	July	No	Req	27	$10(e)
Emory University Hospital	Emory University	Indep	185	35	65	2,958	Rotating	6	12	July	No	None	37	$30
Macon Hospital	Macon	CyCo	160	85	15	4,736	Rotating	5	12	July	No	Req	18	$30(f)
ILLINOIS														
Alexian Bros. Hosp. (male patients only)	Chicago	Chrch	285	48	52	3,014	Mixed	7	12	July	(17)	None	20	$40
American Hospital [1]	Chicago	Indep	170	20	80	1,729	Rotating	4	12	Jan.	No	None	39	No
Augustana Hospital	Chicago	Chrch	375	34	66	4,393	Rotating	10	18	Jan. & July	No	Req	21	No
Chicago Memorial Hospital	Chicago	Indep	108	86	14	1,867	Mixed	4	12	July	No	Req	57	No
Columbus Hospital	Chicago	Chrch	182	85	15	2,939	Rotating	4	12	July	No	None	81	$25
Cook County Hospital [1]	Chicago	Co	3,300	100		63,018	Mixed	96	18	Jan. & July	No	None	18	No
Edgewater Hospital	Chicago	Indep	140	..	..	2,943	Rotating	5	12	Jan. & July	No	None	24	$10
Englewood Hospital	Chicago	Indep	135	..	..	1,989	Rotating	4	12	Jan. & July	No	Req	19	$20
Frances E. Willard Hospital [1]	Chicago	Indep	140	96	4	2,329	Rotating	6	12	Jan. & July	No	None	16	No
Garfield Park Community Hospital	Chicago	Indep	228	22	78	2,757	Mixed	5	12	July	No	Op	22	No
Grant Hospital	Chicago	Indep	271	50	50	4,523	Rotating	7	12	July	No	Req	23	No
Holy Cross Hospital	Chicago	Chrch	109	29	71	2,511	Rotating	3	12	June	No	None	34	$10
Hospital of St. Anthony de Padua	Chicago	Chrch	265	10	90	3,342	Rotating	6	18	(1-e)	No	None	19	$10
Illinois Central Hospital	Chicago	Indus	276	37	63	3,605	Mixed	8	12	(1-e)	No	Req	22	No
Illinois Masonic Hospital	Chicago	Frat	175	22	78	2,376	Mixed	6	12	July	No	Req	23	No
Jackson Park Hospital	Chicago	Indep	265	..	..	2,689	Rotating	10	12&18	Feb. & July	No	Req	28	$10
Lake View Hospital	Chicago	Indep	140	19	81	1,662	Rotating	4	12	July	No	Req	15	$25
Lutheran Deaconess Home and Hospital	Chicago	Chrch	214	18	82	3,114	Mixed	5	12	July	No	None	21	$15
Lutheran Memorial Hospital	Chicago	Chrch	205	..	..	2,167	Mixed	4	12	July	No	Req	22	$10
Mercy Hospital	Chicago	Chrch	395	34	66	4,902	Mixed	12	12	July	No	Req	16	No
Michael Reese Hospital [1]	Chicago	Indep	629	82	18	11,535	Rotating	34	12&24	Jan. & July	(18)	Op	49	No
Mother Cabrini Memorial Hospital	Chicago	Chrch	168	94	6	2,502	Rotating	4	12	July	No	None	39	$25
Mount Sinai Hospital [1]	Chicago	Indep	204	44	56	4,526	Rotating	8	12	July	(19)	Op	33	No
Norwegian-American Hospital	Chicago	Indep	180	8	92	2,707	Rotating	6	12	Apr. & July	No	Req	29	$20
Passavant Memorial Hospital [1]	Chicago	Indep	250	6	94	3,513	Mixed	6	12	(1-r)	Yes	Req	60	No
Presbyterian Hospital	Chicago	Chrch	462	72	28	9,365	Mix. & Str.	27	12&18	(1-d)	No	Op	47	No
Provident Hospital [1] (col.)	Chicago	Indep	150	..	..	1,967	Rotating	6	12	(1-o)	No	Req	40	No
Ravenswood Hospital	Chicago	Indep	192	..	..	4,686	Rotating	5	12	June & July	No	Op	20	No
Research and Educational Hospital [1]	Chicago	State	382	100		6,282	Rotating	12	12	July	No	Op	76	No
Roseland Community Hospital	Chicago	Indep	133	30	70	2,658	Rotating	3	12	July	No	Req	16	$15
St. Anne's Hospital	Chicago	Chrch	290	53	47	4,860	Rotating	7	12	June	No	Req	27	No
St. Bernard's Hospital	Chicago	Chrch	230	39	61	3,629	Rotating	6	12	July	No	None	16	No
St. Elizabeth Hospital	Chicago	Chrch	299	27	73	3,746	Mixed	7	12	July	No	Req	15	No
St. Joseph Hospital	Chicago	Chrch	200	14	86	2,542	Rotating	7	12	Apr. & July	No	Req	20	No
St. Luke's Hospital	Chicago	Indep	714	25	75	8,371	Rotating	24	12	(1-e)	No	Req	37	No
St. Mary of Nazareth Hospital	Chicago	Chrch	200	12	88	3,956	Rotating	5	12	July	No	None	15	No
Swedish Covenant Hospital	Chicago	Chrch	210	34	66	2,180	Rotating	5	12	March	No	Op	35	$10
University Hospital	Chicago	Indep	121	31	69	1,394	Rotating	4	12	(1-e)	No	Req	57	$15
University of Chicago Clinics [1]	Chicago	Indep	408	94	6	5,430	Straight	30	12	(1-e)	(21)	Req	76	No
Washington Boulevard Hospital	Chicago	Indep	110	..	..	1,612	Rotating	6	18	(1-f)	No	Req	23	No
Wesley Memorial Hospital [1]	Chicago	Chrch	250	43	57	3,812	Rotating	6	12	Jan. & July	No	None	42	No
Women and Children's Hospital [2]	Chicago	Indep	125	..	..	1,840	Rotating	5	12	Jan. & July	No	Req	60	No
Woodlawn Hospital	Chicago	Indep	172	..	..	2,820	Rotating	3	12	Jan. & July	No	None	18	No
St. Mary's Hospital	East St. Louis	Chrch	296	54	46	2,934	Rotating	5	12	July	No	None	18	$25
Evanston Hospital	Evanston	Indep	271	60	40	4,704	Rotating	12	12	(1-e)	No	Req	66	No
St. Francis Hospital	Evanston	Chrch	350	61	39	4,649	Rotating	8	12	July	No	None	38	$25
Little Company of Mary Hospital	Evergreen Park	Chrch	174	52	48	3,252	Rotating	3	12	June	No	Req	16	$25
Oak Park Hospital [1]	Oak Park	Chrch	165	12	88	3,593	Rotating	6	12	(1-e)	No	Req	22	No
West Suburban Hospital	Oak Park	Indep	427	7	93	5,040	Rotating	10	12	July & Oct.	No	Req	39	No
St. Francis Hospital	Peoria	Chrch	330	39	61	5,444	Rotating	4	12	July	No	None	24	$20
St. Mary Hospital	Quincy	Chrch	215	85	15	2,963	Rotating	3	12	July	No	None	16	No
St. Anthony's Hospital	Rockford	Chrch	215	..	..	2,921	Mixed	1	12	July	(112)	None	28	No
St. Anthony's Hospital	Rock Island	Chrch	168	67	33	2,307	Mixed	1	12	July	No	Op	20	$25
INDIANA														
St. Catherine's Hospital	East Chicago	Chrch	350	32	68	2,588	Rotating	4	12	June & July	No	None	30	$25
Protestant Deaconess Hospital	Evansville	Chrch	180	20	80	2,384	Mixed	1	12	July	No	None	19	No
Lutheran Hospital	Fort Wayne	Chrch	182	..	..	2,307	Rotating	2	12	July	No	None	28	$25(g)
St. Joseph Hospital	Fort Wayne	Chrch	300	46	54	3,880	Rotating	4	12	July	No	None	32	$25
St. Mary's Mercy Hospital	Gary	Chrch	270	48	52	3,345	Rotating	4	12	July	No	Req	24	$25(g)
St. Margaret's Hospital	Hammond	Chrch	250	62	38	2,835	Rotating	7	12	(1-g)	No	Op	17	$25
Indianapolis City Hospital	Indianapolis	City	566	..	..	9,122	Rotating	29	12	July	No	Req	38	$10
Indiana University Hospitals [1]	Indianapolis	State	480	86	14	7,490	Rotating	20	12	July	(22)	Req	49	$12.50
Methodist Episcopal Hospital	Indianapolis	Chrch	426	..	..	11,192	Rotating	16	12	July	No	Req	31	$10
St. Vincent's Hospital	Indianapolis	Chrch	295	29	71	4,210	Rotating	6	12	July	No	None	21	$15
St. Elizabeth Hospital	La Fayette	Chrch	245	91	9	4,047	Rotating	4	12	July	No	None	16	$25
Ball Memorial Hospital [1]	Muncie	Indep	160	28	72	2,319	Mixed	1	12	July	No	None	23	$15
Epworth Hospital	South Bend	Indep	187	53	47	2,303	Rotating	3	12	July	No	Req	23	$35
St. Joseph Hospital	South Bend	Chrch	147	70	30	1,996	Rotating	2	12	July	No	Req	20	$25

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients: Percentage: Free and Part Pay	Classification of Patients: Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
IOWA														
Mercy Hospital	Cedar Rapids	Chrch	145	..	..	1,569	Mixed	1	12	July	No	None	18	$25
Jennie Edmundson Memorial Hospital	Council Bluffs	Indep	139	..	..	2,363	Mixed	2	12	June	No	Op	20	$30
Mercy Hospital	Council Bluffs	Chrch	149	..	..	1,779	Rotating	3	12	June	No	None	26	$25(d)
Mercy Hospital	Davenport	Chrch	135	26	74	2,209	Rotating	2	12	July & Aug.	No	None	28	$25
Broadlawns—Polk Co. Public Hospital	Des Moines	Co	112	100		3,706	Rotating	6	12	July	(23)	Req	56	$25
Iowa Lutheran Hospital	Des Moines	Chrch	160	..	..	2,744	Mixed	3	12	July	No	None	16	$40
Iowa Methodist Hospital	Des Moines	Chrch	279	23	77	5,416	Rotating	6	12	July	No	None	21	$20(d)
Mercy Hospital	Des Moines	Chrch	176	..	..	2,580	Rotating	4	12	July	(23)	None	17	$35
University Hospitals [1]	Iowa City	State	1,008	95	5	13,776	Rotating	18	12	July	No	Req	57	(d)
St. Joseph's Mercy Hospital [1]	Sioux City	Chrch	220	15	85	5,460	Rotating	4	12	July	No	Req	42	$25
KANSAS														
Bell Memorial Hospital [1]	Kansas City	State	250	89	11	4,655	Rotating	8	12	July	(24)	Req	83	$15
Bethany Methodist Hospital	Kansas City	Chrch	145	19	81	2,359	Rotating	3	12	July	No	None	52	$25
St. Margaret's Hospital	Kansas City	Chrch	265	90	10	6,611	Rotating	5	12	July	No	Req	69	$25
St. Francis Hospital	Wichita	Chrch	350	50	50	3,806	Rotating	5	12	July	(25)	Req	40	$40
Wesley Hospital	Wichita	Chrch	228	25	75	3,355	Mixed	5	12	July	(26)	Op	16	$25
KENTUCKY														
St. Elizabeth Hospital	Covington	Chrch	290	82	18	3,666	Rotating	6	12	July	No	Req	16	$25
Good Samaritan Hospital	Lexington	Chrch	216	36	64	3,831	Rotating	3	12	July	No	None	18	$25
St. Joseph's Hospital	Lexington	Chrch	210	44	56	3,681	Rotating	3	12	July	No	None	20	$25(d)
Kentucky Baptist Hospital	Louisville	Chrch	150		100	2,527	Mixed	2	12	July	No	None	21	No
Louisville City Hospital [1]	Louisville	City	444	100		10,476	Rotating	18	12	July	(27)	Req	36	$10
Norton Memorial Infirmary	Louisville	Chrch	130	68	32	2,133	Mixed	2	12	July	No	Req	45	$20
St. Anthony's Hospital	Louisville	Chrch	157	59	41	2,176	Mixed	2	12	July	No	None	15	$45
St. Joseph Infirmary	Louisville	Chrch	327	43	57	4,977	Rotating	3	12	July	No	None	32	$25
SS. Mary and Elizabeth Hospital	Louisville	Chrch	163	..	..	3,057	Mixed	2	12	July	No	None	18	$40
LOUISIANA														
Charity Hospital [1]	New Orleans	State	1,809	100		55,477	Rotating	68	12	July	No	Req	46	$10
Flint Goodridge Hospital of Dillard University (col.)	New Orleans	Indep	100	63	37	1,129	Mixed	5	12	July	No	Req	33	$10-25
Hotel Dieu Hospital	New Orleans	Chrch	263	21	79	5,886	Rotating	6	12	July	No	None	20	$25
Mercy Hospital—Soniat Memorial	New Orleans	Chrch	144	38	62	2,365	Mixed	2	12	July	No	Op	31	$45
Southern Baptist Hospital	New Orleans	Chrch	222	31	69	5,681	Rotating	9	12	July	No	None	21	$15
Touro Infirmary [1]	New Orleans	Indep	366	74	26	7,534	Rotating	15	12	July	No	Req	38	$10
T. E. Schumpert Memorial Sanitarium	Shreveport	Chrch	162	57	43	2,839	Mixed	2	12	July	No	Op	29	$80
Shreveport Charity Hospital	Shreveport	State	515	100		13,808	Rotating	13	12	July	No	None	46	$10
MAINE														
Eastern Maine General Hospital	Bangor	Indep	173	43	57	3,316	Rotating	3	12	July	No	Req	18	$25
Central Maine General Hospital	Lewiston	Indep	181	56	44	2,448	Mixed	2	12	July	No	None	34	No
Maine General Hospital	Portland	Indep	302	76	24	4,645	Mixed	6	12	July	No	Req	24	No
MARYLAND														
Baltimore City Hospitals [1]	Baltimore	City	1,258	100		6,021	Mix.&Str.	17	12	July	No	Req	29	No
Bon Secours Hospital	Baltimore	Chrch	145	56	44	1,470	Rotating	5	12	July	(29)	Req	19	$25
Church Home and Infirmary [1]	Baltimore	Chrch	184	81	19	2,511	Rotating	7	12	July	No	Req	46	$15
Franklin Square Hospital	Baltimore	Indep	129	77	23	1,792	Mixed	6	12	July	No	None	18	$12.50(h)
Hospital for Women [1]	Baltimore	Indep	135	56	44	1,862	Mixed	5	12	July	(28)	Req	16	$15
Johns Hopkins Hospital [1]	Baltimore	Indep	1,004	88	12	12,515	Straight	60	12	Sept.	No	Req	65	No
Maryland General Hospital	Baltimore	Chrch	228	51	49	4,106	Rotating	8	12	July	No	Req	16	$10
Mercy Hospital	Baltimore	Chrch	264	60	40	4,562	Rotating	9	12	July	No	Req	21	No
Provident Hosp. and Free Disp. (col.)	Baltimore	Indep	129	91	9	1,882	Rotating	7	12	July & Oct.	No	Req	18	No
St. Agnes Hospital	Baltimore	Chrch	211	75	25	3,329	Rotating	4	12	July	(29)	Req	25	No
St. Joseph's Hospital	Baltimore	Chrch	290	58	42	4,189	Rotating	6	12	July	No	Req	30	$15
Sinai Hospital [1]	Baltimore	Indep	269	61	39	4,278	Straight	15	12	July	No	Req	29	No
South Baltimore General Hospital	Baltimore	Indep	115	74	26	2,185	Rotating	5	12	July	No	Req	16	$20
Union Memorial Hospital	Baltimore	Indep	332	75	25	5,082	Mixed	15	12	July	No	Req	39	No
University Hospital	Baltimore	State	275	81	19	5,113	Rotating	13	12	July	(30)	Req	39	No
West Baltimore General Hospital	Baltimore	Indep	200	39	61	2,050	Rotating	5	12	July	No	Req	22	$15
MASSACHUSETTS														
Beverly Hospital	Beverly	Indep	141	52	48	2,475	Rotating	3	12	(1-h)	No	Req	37	$25
Beth Israel Hospital	Boston	Indep	202	29	71	4,644	Straight	14	15½&20½	(1-v)	No	Req	41	No
Boston City Hospital [1]	Boston	City	2,285	..	..	42,671	Straight	93	12-24	Varies	(31)	Req	27	No
Carney Hospital	Boston	Chrch	210	85	15	2,841	Mixed	12	12&16	(1-i)	No	Req	16	No
Faulkner Hospital	Boston	Indep	157	80	20	2,800	Mixed	2	12	June	No	Req	38	No
Long Island Hospital [1]	Boston	City	550	100		1,735	Rotating	6	12	July	No	Req	47	$50
Massachusetts General Hospital	Boston	Indep	405	87	13	8,021	Straight	38	12-25	(1-e)	No	Req	57	No
Massachusetts Memorial Hospitals [1]	Boston	Indep	367	68	32	5,560	Rotating	12	12	Aug.	(32)	Req	45	No
New England Hospital for Women and Children,[2] Roxbury	Boston	Indep	260	9	91	4,082	Rotating	8	12	July & Oct.	No	Req	38	No
Peter Bent Brigham Hospital	Boston	Indep	247	64	36	4,272	Straight	24	12&16½	(1-j)	No	Req	64	No
St. Elizabeth's Hospital, Brighton	Boston	Chrch	300	..	..	4,138	Rotating	7	21	(1-e)	No	Req	18	No
Brockton Hospital	Brockton	Indep	158	74	26	2,690	Rotating	3	12	(1-t)	No	Req	17	$10(d)
Cambridge Hospital	Cambridge	Indep	300	90	10	2,461	Rotating	4	12	(1-e)	(33)	Req	20	No
Union Hospital	Fall River	Indep	175	37	63	3,367	Mixed	2	12	July	No	Req	24	$30-50
Lawrence General Hospital	Lawrence	Indep	152	44	56	2,105	Mixed	2	12	June	No	Req	30	$10
Lowell General Hospital	Lowell	Indep	180	75	25	2,843	Rotating	2	12	July	No	Req	39	$25
St. John's Hospital	Lowell	Chrch	166	64	36	3,204	Mixed	3	12	June	No	Op	18	No
St. Joseph's Hospital	Lowell	Chrch	108	66	34	2,096	Rotating	2	12&24	July	No	Req	38	$10
Lynn Hospital	Lynn	Indep	250	59	41	4,298	Rotating	3	12	June & July	No	Req	15	$300 yr.
St. Luke's Hospital	New Bedford	Indep	330	88	12	5,437	Rotating	6	12	July	No	Req	28	No
Newton Hospital	Newton	Indep	290	67	33	4,774	Rotating	6	12	July	No	Req	39	No
House of Mercy Hospital	Pittsfield	Indep	222	97	3	2,561	Rotating	2	12	July	No	Req	22	$40
St. Luke's Hospital	Pittsfield	Chrch	189	5	95	3,067	Rotating	2	12	June	No	Req	15	$25
Quincy City Hospital [1]	Quincy	City	296	24	76	4,774	Rotating	6	12	Jan. & July	No	None	26	No
Salem Hospital	Salem	Indep	180	65	35	3,154	Rotating	3	12	July & Aug.	No	Req	26	$25
Springfield Hospital	Springfield	Indep	182	83	17	4,486	Rotating	9	18	Jan. & July	(34)	Req	22	No
State Infirmary [1]	Tewksbury	State	2,000	100		3,511	Rotating	4	12	July	No	None	19	No
Waltham Hospital	Waltham	Indep	216	..	..	2,686	Mixed	3	12	(1-k)	No	Req	28	$15(i)
Memorial Hospital	Worcester	Indep	215	26	74	4,152	Rotating	9	18	(1-o)	No	Req	54	No
St. Vincent Hospital	Worcester	Chrch	250	25	75	4,009	Mixed	5	12	(1-e)	No	Req	35	$25
Worcester City Hospital	Worcester	City	400	75	25	8,625	Rotating	16	24	(1-w)	No	Req	30	No
Worcester Hahnemann Hospital	Worcester	Indep	140	..	..	1,661	Rotating	2	12	July	No	None	61	...
MICHIGAN														
St. Joseph's Mercy Hospital	Ann Arbor	Chrch	130	..	..	2,001	Mixed	1	12	July	(35)	Req	32	$25
University Hospital [1]	Ann Arbor	State	1,287	..	..	30,820	Mixed	30	12	July	No	Req	50	No
Battle Creek Sanitarium [1]	Battle Creek	Indep	1,013	40	60	5,105	Mixed	1	12	July	No	None	26	$20
Leila Y. Post Montgomery Hospital	Battle Creek	Chrch	175	90	10	1,893	Mixed	1	12	July	No	Req	34	$25
Mercy Hospital	Bay City	Chrch	160	23	77	1,255	Rotating	2	12	July	No	Req	27	$25
City of Detroit Receiving Hospital	Detroit	City	764	100		23,806	Rotating	36	12	July	(36)	Req	41	$19.50(j)

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients: Percentage: Free and Part Pay	Classification of Patients: Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
MICHIGAN—Continued														
Grace Hospital [1]	Detroit	Indep	398	78	22	9,407	Rotating	20	12	July & Sept.	(36)	Req	34	$12.50
Harper Hospital	Detroit	Indep	750	61	39	10,291	Rotating	32	12	July	(37)	Req	20	No
Henry Ford Hospital [1]	Detroit	Indep	610	42	58	6,242	Rotating	20	12	Sept.	No	Op	43	$100(a)
Providence Hospital	Detroit	Chrch	450	88	12	7,486	Rotating	16	12	July	(38)	Req	33	$10
St. Joseph Mercy Hospital	Detroit	Chrch	198	27	73	2,290	Rotating	6	12	July	No	Req	18	$15
St. Mary's Hospital	Detroit	Chrch	250	42	58	3,220	Rotating	7	12	July	(39)	Req	17	$10
Dr. William J. Seymour Hospital	Eloise	Co	1,368	100		14,492	Rotating	13	12	July	(36)	Req	28	$25
Hurley Hospital [1]	Flint	City	425	..	..	9,838	Rotating	12	12	July	No	None	35	$25
Blodgett Memorial Hospital [1]	Grand Rapids	Indep	150	79	21	2,039	Rotating	4	12	July	No	Req	38	No
Butterworth Hospital	Grand Rapids	Indep	272	37	63	2,748	Rotating	5	12	July	No	Req	18	$7.50
St. Mary's Hospital	Grand Rapids	Chrch	253	46	54	2,966	Rotating	5	12	July	(40)	Req	30	No
Highland Park General Hospital	Highland Park	City	181	1	99	2,645	Rotating	6	12	July & Sept.	No	Req	24	$10
W. A. Foote Memorial Hospital	Jackson	City	156	..	..	2,727	Rotating	3	12	July	No	Req	15	$35
Edward W. Sparrow Hospital	Lansing	Indep	135	75	25	2,749	Mixed	1	12	July	No	None	43	$50
St. Lawrence Hospital	Lansing	Chrch	128	..	..	2,596	Rotating	2	12	July	(41)	None	55	$30
Hackley Hospital [1]	Muskegon	Indep	125	73	27	1,933	Rotating	2	12	July	No	None	36	$25
Mercy Hospital	Muskegon	Chrch	149	83	17	2,609	Mixed	1	12	July	No	Req	19	$50
Saginaw General Hospital	Saginaw	Indep	156	19	81	2,219	Rotating	4	12	July	No	Req	38	$25
St. Mary's Hospital	Saginaw	Chrch	176	..	..	2,610	Rotating	2	12	July	No	None	20	$45
MINNESOTA														
St. Luke's Hospital	Duluth	Indep	270	71	29	3,990	Mixed	7	12	Jan. & July	(42)	Req	62	$12.50
St. Mary's Hospital	Duluth	Chrch	290	58	42	4,471	Rotating	6	12	(1-e)	No	Req	65	$12.50
Asbury Hospital [1]	Minneapolis	Chrch	145	..	..	2,061	Rotating	3	12	Jan. & July	No	None	39	$25
Eitel Hospital	Minneapolis	Indep	120	64	36	2,781	Mixed	2	12	Jan. & July	No	None	32	$25
Fairview Hospital	Minneapolis	Chrch	225	14	86	3,174	Rotating	5	12	Jan. & July	(43)	Req	29	$25
Lutheran Deaconess Home and Hospital	Minneapolis	Chrch	150	65	35	2,318	Mixed	4	12	Jan. & June	No	None	27	$25
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	13,006	Rotating	24	12	Jan. & July	No	Req	47	No
Northwestern Hospital [1]	Minneapolis	Indep	185	13	87	3,770	Rotating	4	12	Jan. & July	No	None	36	$25(d)
St. Barnabas Hospital	Minneapolis	Chrch	166	6	94	2,482	Mixed	2	12	July	No	None	29	$25
St. Mary's Hospital	Minneapolis	Chrch	250	42	58	3,724	Mixed	6	12	Apr. & July	No	Op	32	$15(i)
Swedish Hospital	Minneapolis	Indep	313	13	87	4,285	Mixed	5	12	July	No	Op	27	$25
University Hospitals [1]	Minneapolis	State	410	..	..	6,870	Straight	21	12	July	(44)	Req	71	No
Ancker Hospital	St. Paul	CyCo	1,050	99	1	11,097	Rotating	32	12	July	No	Req	64	No
Bethesda Hospital	St. Paul	Chrch	120	..	..	2,093	Mixed	3	12	July	No	None	30	$25
Charles T. Miller Hospital	St. Paul	Indep	242	69	31	2,811	Rotating	6	12	July	No	Req	61	No
Northern Pacific Beneficial Association Hospital	St. Paul	Indep	162		100	2,032	Rotating	2	12	July	No	Req	21	$25
St. Joseph's Hospital	St. Paul	Chrch	270	50	50	4,789	Rotating	6	12	July	(43)	None	32	$25
MISSOURI														
St. Louis County Hospital	Clayton	Co	225	91	9	4,129	Rotating	5	12	July	No	Op	20	$25
Kansas City General Hospital	Kansas City	City	475	100		8,615	Rotating	24	12	July	No	Req	75	$20
Kansas City General Hosp. No. 2 (col.)	Kansas City	City	274	100		2,545	Rotating	12	12	July	No	Req	47	$17.50
Menorah Hospital	Kansas City	Indep	266	5	95	2,423	Rotating	5	12	July	No	Req	54	$25
Research Hospital	Kansas City	Indep	225	12	88	3,617	Rotating	4	12	July	No	None	69	$25
St. Joseph Hospital	Kansas City	Chrch	262	41	59	3,460	Mixed	5	12	July	No	Op	80	$25
St. Luke's Hospital	Kansas City	Chrch	192	41	59	3,201	Rotating	4	12	July	No	None	87	$25
St. Mary's Hospital	Kansas City	Chrch	181	31	69	2,990	Rotating	5	12	July	No	None	59	$25
Trinity Lutheran Hospital	Kansas City	Chrch	149	15	85	1,962	Rotating	4	12	July	No	None	26	$50
Missouri Methodist Hospital [1]	St. Joseph	Chrch	220	30	70	4,255	Rotating	4	12	July	No	Req	24	$40
St. Joseph's Hospital	St. Joseph	Chrch	141	35	65	2,063	Rotating	2	12	July	No	Op	18	$30
Alexian Bros. Hosp. (male patients only)	St. Louis	Chrch	250	48	52	1,377	Mixed	4	12	July	(45)	Req	19	$25
Barnes Hospital	St. Louis	Chrch	270	35	65	6,590	Straight	32	12&18	Jan. & July	(46)	Req	66	No
Christian Hospital	St. Louis	Indep	162	..	..	1,260	Rotating	2	12	July	No	Req	26	$25(k)
De Paul Hospital	St. Louis	Chrch	285	26	74	4,800	Rotating	7	12	July	No	Req	25	$25
Evangelical Deaconess Home and Hosp.	St. Louis	Chrch	185	17	83	3,592	Rotating	5	12	July	No	None	17	$25(d)
Jewish Hospital	St. Louis	Indep	290	86	14	4,612	Rotating	10	12	July	(47)	Req	38	$15
Lutheran Hospital [1]	St. Louis	Chrch	180	..	..	3,070	Mixed	3	12	July	No	Req	18	$25
Missouri Baptist Hospital	St. Louis	Chrch	500	20	80	4,469	Mixed	9	12	July	No	None	26	$25
St. Anthony's Hospital	St. Louis	Chrch	250	28	72	3,799	Rotating	5	12	July	(48)	Req	31	$10
St. John's Hospital	St. Louis	Chrch	348	17	83	4,814	Rotating	9	12	July	No	Op	30	$20
St. Louis City Hospital	St. Louis	City	885	100		23,353	Rotating	57	12	July	No	Req	25	$9(f)
St. Louis City Hospital No. 2 (col.)	St. Louis	City	335	100		8,129	Rotating	20	12	July	No	None	16	$10(f)
St. Luke's Hospital	St. Louis	Chrch	210	49	51	3,926	Rotating	7	12	July	No	Req	26	$25
St. Mary's Group of Hospitals	St. Louis	Chrch	607	68	32	7,810	Rotating	26	12	July	No	Req	47	No
MONTANA														
Murray Hospital	Butte	Indep	132		100	1,537	Rotating	2	12	Jan. & July	No	Req	30	$40
St. James Hospital	Butte	Chrch	144	35	65	1,780	Mixed	2	12	July	No	Req	16	$50(m)
NEBRASKA														
St. Francis Hospital	Grand Island	Chrch	160	70	30	1,379	Mixed	1	12	July	No	None	18	$20(e)
Lincoln General Hospital [1]	Lincoln	Indep	162	..	..	2,137	Rotating	2	12	July	No	Req	33	$25
St. Elizabeth's Hospital	Lincoln	Chrch	200	81	19	3,372	Rotating	2	12	July	No	None	16	$35
Bishop Clarkson Memorial Hospital	Omaha	Chrch	108	75	25	1,947	Rotating	3	12	July	No	Op	35	$25
Creighton Memorial, St. Joseph's Hosp.	Omaha	Chrch	433	84	16	5,277	Rotating	10	12	July	No	Req	41	$25
Douglas County Hospital	Omaha	Co	430	100		3,149	Rotating	4	12	July	No	Req	60	$20
Evangelical Covenant Hospital	Omaha	Chrch	125	61	39	1,879	Rotating	3	12	June	No	Req	18	$35
Immanuel Deaconess Institute	Omaha	Chrch	139	..	..	2,692	Rotating	3	12	June	No	None	35	$20(i)
Nebraska Methodist Episcopal Hosp. [1]	Omaha	Chrch	225	16	84	3,246	Mixed	4	12	July	No	Req	27	$25
St. Catherine's Hospital	Omaha	Chrch	175	14	86	3,028	Rotating	4	12	July	No	None	15	$25
University of Nebraska Hospital	Omaha	State	220	100		3,850	Rotating	12	12	July	No	Req	74	$25
NEW HAMPSHIRE														
Mary Hitchcock Memorial Hospital [1]	Hanover	Indep	142	18	82	2,744	Rotating	4	12&18	Jan. & July	No	Req	57	$100 yr.
NEW JERSEY														
Atlantic City Hospital	Atlantic City	Indep	316	73	27	4,932	Rotating	8	12	July	(49)	Req	23	$22.50
Bayonne Hospital and Dispensary	Bayonne	Indep	225	85	15	3,845	Rotating	5	15	(1-e)	No	Req	40	$25
Cooper Hospital	Camden	Indep	351	73	27	7,091	Rotating	10	12	July	No	Req	38	$10
West Jersey Homeopathic Hospital	Camden	Indep	267	64	36	3,678	Rotating	7	12	June	No	Req	40	$20
Homeopathic Hospital of Essex County	East Orange	Indep	120	63	37	2,423	Mixed	2	12	July	No	Req	23	$40
Alexian Bros. Hosp. (male patients only)	Elizabeth	Chrch	175	70	30	1,786	Mixed	2	12	July & Aug.	(110)	Req	36	$75
Elizabeth General Hosp. and Dispensary	Elizabeth	Indep	226	66	34	4,803	Rotating	8	12	July	No	Req	29	$15
St. Elizabeth Hospital	Elizabeth	Chrch	260	82	18	4,265	Rotating	5	12	July	No	Req	19	$25
Englewood Hospital [1]	Englewood	Indep	233	86	14	4,020	Rotating	8	12&18	(1-i)	No	Req	35	$20
Hackensack Hospital	Hackensack	Indep	260	83	17	6,627	Rotating	8	12	July	(50)	Req	21	$25
St. Mary Hospital	Hoboken	Chrch	460	95	5	4,479	Rotating	9	12	July & Oct.	No	Req	16	$25
Christ Hospital	Jersey City	Chrch	218	23	77	3,693	Rotating	6	12	(1-f)	No	Req	26	$25
Medical Center of Jersey City [1]	Jersey City	City	1,200	95	5	17,903	Rotating	58	12-24	(1-g)	(52)	Req	22	No
St. Francis Hospital	Jersey City	Chrch	239	80	20	3,540	Rotating	7	12	July	(52)	Req	16	No
Monmouth Memorial Hospital	Long Branch	Indep	215	72	28	4,020	Rotating	9	18	July	(53)	Op	25	$25
Mountainside Hospital	Montclair	Indep	355	63	37	4,874	Rotating	9	18	Jan. & July	No	Req	25	$25

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free and Part Pay	Classification of Patients Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
NEW JERSEY—Continued														
All Souls Hospital	Morristown	Chrch	159	..	..	1,629	Mixed	2	12	July & Sept.	No	Req	47	$35
Morristown Memorial Hospital [1]	Morristown	Indep	160	45	55	2,924	Rotating	4	12	(1-m)	No	Req	25	$40
Fitkin Memorial Hospital	Neptune	Indep	173	..	..	2,915	Rotating	7	12	Jan. & July	No	Req	22	$25
Hospital of St. Barnabas and for Women and Children	Newark	Chrch	266	43	57	5,458	Rotating	3	12	July	No	Req	22	$45
Newark Beth Israel Hospital	Newark	Indep	414	50	50	8,490	Rotating	12	12	(1-n)	No	Req	49	$100 yr.
Newark City Hospital [1]	Newark	City	770	100		17,647	Rotating	21	24	(1-e)	No	Op	30	No
Newark Memorial Hospital	Newark	Indep	157	68	32	1,843	Rotating	4	12	July	No	Req	22	$25
Presbyterian Hospital	Newark	Chrch	267	11	89	5,047	Mixed	..	12	July	No	Req	36	...
St. James Hospital [1]	Newark	Chrch	125	54	46	1,996	Mixed	3	12	July	No	Req	17	$35
St. Michael's Hospital	Newark	Chrch	319	96	4	4,151	Mixed	7	12	July & Aug.	(52)	Req	44	$30
St. Peter's General Hospital	New Brunswick	Chrch	203	59	41	3,405	Rotating	4	12	July & Sept.	No	Req	24	(i)
Orange Memorial Hospital	Orange	Indep	388	60	40	6,088	Rotating	8	12	July	No	Req	29	$25
Passaic General Hospital [1]	Passaic	Indep	225	73	27	4,003	Rotating	4	12	July	No	Req	25	$25
St. Mary's Hospital	Passaic	Chrch	225	54	46	2,948	Rotating	3	12	July	No	Req	16	$50
Nathan and Miriam Barnert Memorial Hospital	Paterson	Indep	117	..	..	2,254	Rotating	4	12	July & Oct.	No	Req	29	$15-20
Paterson General Hospital	Paterson	Indep	326	80	20	5,163	Rotating	7	18	Jan. & July	No	Op	18	$12.50(h)
Muhlenberg Hospital	Plainfield	Indep	275	73	27	4,573	Rotating	5	12	July	No	Req	41	$25
Holy Name Hospital	Teaneck	Chrch	220	49	51	3,063	Rotating	5	12	July	(50)	Op	15	$50
Mercer Hospital	Trenton	Indep	250	59	41	3,959	Rotating	5	12	July	No	Req	31	$27
St. Francis Hospital	Trenton	Chrch	320	96	4	4,692	Rotating	8	12	July	No	Req	16	$25
William McKinley Memorial Hospital	Trenton	Indep	176	..	..	2,529	Rotating	4	12	July	No	None	19	$25
North Hudson Hospital	Weehawken	Indep	190	60	40	2,290	Rotating	6	24	July	(52)	Req	16	$25
NEW YORK														
Albany Hospital [1]	Albany	Indep	537	86	14	8,822	Mixed	16	12	July	No	Req	68	No
Memorial Hospital [1]	Albany	Indep	140	46	54	2,645	Mixed	5	12	July & Sept.	No	Op	26	$25
St. Peter's Hospital	Albany	Chrch	150	41	59	2,700	Mixed	5	12	July	(55)	Req	37	$40
Auburn City Hospital	Auburn	Indep	155	70	30	2,863	Rotating	2	12	July	No	Req	23	$25
Binghamton City Hospital	Binghamton	City	450	63	37	9,175	Rotating	10	24	July	No	Req	19	No
Beth-El Hospital	Brooklyn	Indep	239	73	27	4,507	Rotating	15	18	Jan. & July	No	Req	24	No
Beth Moses Hospital	Brooklyn	Indep	224	45	55	4,289	Rotating	16	24	Jan. & July	No	Req	18	No
Brooklyn Hospital	Brooklyn	Indep	322	28	72	6,736	Rotating	14	24	July	No	Op	36	No
Caledonian Hospital [1]	Brooklyn	Indep	130	57	43	1,236	Rotating	2	12	June	No	Req	26	$25
Coney Island Hospital [1]	Brooklyn	City	300	100		7,853	Rotating	20	24	July	No	Req	34	No
Cumberland Hospital	Brooklyn	City	321	100		7,982	Rotating	24	24	July	No	Req	40	No
Greenpoint Hospital	Brooklyn	City	368	100		8,658	Rotating	16	24	July	No	Req	37	No
Israel-Zion Hospital	Brooklyn	Indep	410	41	59	7,679	Rotating	24	24	Jan. & July	(56)	Req	27	No
Jewish Hospital [1]	Brooklyn	Indep	674	49	51	12,893	Rotating	53	30	Jan. & July	(56)	Req	43	No
Kings County Hospital	Brooklyn	City	1,660	100		35,785	Rotating	72	18	(1-o)	No	Req	19	No
Long Island College Hospital	Brooklyn	Indep	480	49	51	7,609	Straight	15	12	July	No	Req	46	No
Methodist Episcopal Hospital	Brooklyn	Chrch	480	41	59	9,002	Rotating	12	24	July	No	Op	31	No
Norwegian Lutheran Deaconess Home and Hospital [1]	Brooklyn	Chrch	194	51	49	3,545	Rotating	9	12	July	No	Req	30	No
St. Catherine's Hospital	Brooklyn	Chrch	308	35	65	5,263	Rotating	12	24	July	No	Req	28	No
St. John's Hospital	Brooklyn	Chrch	234	56	44	4,854	Rotating	11	24	July	No	Req	64	No
St. Mary's Hospital	Brooklyn	Chrch	330	81	19	4,884	Rotating	14	24	July	No	Req	15	No
St. Peter's Hospital	Brooklyn	Chrch	264	83	17	2,754	Rotating	6	12	July	No	None	24	No
Trinity Hospital	Brooklyn	Indep	115	94	6	2,619	Rotating	10	12	July	No	Req	25	No
Wyckoff Heights Hospital	Brooklyn	Indep	200	76	24	3,868	Rotating	9	18	(1-p)	No	Req	22	No
Buffalo and Emergency Hospitals of the Sisters of Charity	Buffalo	Chrch	342	79	21	6,784	Rotating	16	12	July	(57)	Req	24	$25
Buffalo City Hospital [1]	Buffalo	CyCo	1,065	98	2	12,879	Mixed	17	12-36	July	No	Req	35	$50
Buffalo General Hospital	Buffalo	Indep	462	49	51	8,803	Rotating	14	12	July	(58)	Req	38	No
Deaconess Hospital	Buffalo	Indep	225	39	61	3,880	Rotating	6	12	July	No	None	22	$25
Mercy Hospital	Buffalo	Chrch	215	58	42	3,485	Rotating	4	12	July	No	Req	15	$30
Millard Fillmore Hospital	Buffalo	Indep	309	58	42	5,132	Rotating	6	12	July	No	Req	49	$25
Arnot-Ogden Memorial Hospital	Elmira	Indep	213	63	37	3,932	Mixed	2	12	July	No	Req	28	$25(h)
St. Joseph's Hospital [1]	Elmira	Chrch	216	60	40	3,889	Rotating	2	12	July	No	None	18	$35
Ideal Hospital	Endicott	City	143	5	95	3,027	Mixed	3	12	July	No	None	37	$50
Flushing Hospital and Dispensary	Flushing	Indep	258	44	56	6,524	Rotating	8	24	July	No	Req	16	$25
Mary Immaculate Hospital	Jamaica	Chrch	319	48	52	4,904	Rotating	14	24	July	No	Req	22	No
Charles S. Wilson Memorial Hospital	Johnson City	Indep	219	5	95	3,173	Rotating	3	12	July	No	Req	49	$50
Our Lady of Victory Hospital	Lackawanna	Chrch	150	64	36	1,846	Rotating	3	12	July	No	Req	19	$50
St. John's Long Island City Hospital	Long Island City	Chrch	304	64	36	7,495	Rotating	16	24	July	No	Req	48	No
Nassau Hospital	Mineola	Indep	205	73	27	5,015	Rotating	6	18	Jan. & July	No	None	23	$50
Mount Vernon Hospital [1]	Mount Vernon	Indep	192	42	58	3,683	Rotating	6	24	July	No	Req	16	$25-50
New Rochelle Hospital	New Rochelle	Indep	147	52	48	4,399	Rotating	6	12	July	No	Req	37	$25
Bellevue Hospital [1]	New York	City	2,084	100		62,021	Straight	89	12-24	Jan. & July	No	Req	23	No
Beth David Hospital	New York	Indep	128	75	25	2,350	Rotating	6	24	Jan. & July	No	Req	41	No
Beth Israel Hospital [1]	New York	Indep	438	99	1	6,509	Mixed	24	12&24	July	No	Op	50	No
Bronx Hospital	New York	Indep	313	46	54	6,323	Rotating	16	24	(1-q)	No	Req	25	No
Columbus Hospital	New York	Chrch	300	70	30	2,884	Rotating	8	18	July & Oct.	No	Req	22	No
Fifth Avenue Hospital	New York	Indep	300	45	55	5,376	Straight	9	12&15	(1-e)	No	Req	15	No
Fordham Hospital	New York	City	609	100		12,648	Straight	28	12&24	(1-r)	No	Op	40	No
French Hospital	New York	Frat	200	22	78	3,371	Straight	10	18&24	(1-e)	No	Op	33	No
Gouverneur Hospital	New York	City	229	100		4,684	Mixed	16	12&24	Jan. & July	No	Op	24	No
Harlem Hospital [1]	New York	City	377	100		9,597	Rotating	35	24	Jan. & July	No	Op	33	No
Hospital for Joint Diseases	New York	Indep	355	55	45	5,438	Rotating	12	24	Jan. & July	(54)	Req	46	No
Knickerbocker Hospital	New York	Indep	204	81	19	3,488	Rotating	8	24	(1-e)	No	Req	25	No
Lebanon Hospital	New York	Indep	182	92	8	3,233	Straight	11	20-28	(1-j)	No	Req	34	No
Lenox Hill Hospital [1]	New York	Indep	534	18	82	7,880	Straight	24	24	Jan. & July	No	Req	39	(o)
Lincoln Hospital	New York	City	213	100		6,380	Rotating	20	24	Jan. & July	No	Req	37	No
Manhattan General Hospital	New York	Indep	150	13	87	2,298	Rotating	4	12	Jan. & July	No	Req	23	No
Metropolitan Hospital [1]	New York	City	1,620	100		15,569	Rotating	36	24	July	No	Req	24	No
Montefiore Hosp. for Chronic Diseases [1]	New York	Indep	706	89	11	2,256	Mixed	11	12	Jan. & July	No	Req	63	$25
Morrisania City Hospital [1]	New York	City	539	100		13,290	Rotating	55	24	Jan. & July	No	Req	33	No
Mount Sinai Hospital [1]	New York	Indep	754	95	5	11,301	Mixed	37	12-30	Jan. & July	No	Op	53	(p)
New York City Hospital	New York	City	1,060	100		10,448	Straight	27	18	Jan. & July	No	Req	30	No
New York Homeopathic Medical College and Flower Hospital [1]	New York	Indep	225	80	20	5,318	Rotating	15	12	July	(59)	Req	22	No
New York Hospital [1]	New York	Indep	823	76	24	11,454	Straight	30	12	Sept.	No	Req	58	No
New York Infirmary for Women and Children [2]	New York	Indep	155	85	15	2,171	Rotating	5	12	(1-s)	No	Req	60	(i)
New York Polyclinic Medical School and Hospital	New York	Indep	345	42	58	6,790	Rotating	8	24	(1-e)	No	Req	24	No
New York Post-Graduate Medical School and Hospital	New York	Indep	415	16	84	8,940	Straight	32	24-28	Varies	No	Req	36	No
Presbyterian and Sloane Hospitals [1]	New York	Indep	963	..	..	12,533	Straight	43	12-25	(1-j)	No	Req	43	No

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free and Part Pay	Classification of Patients Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
NEW YORK—Continued														
Roosevelt Hospital	New York	Indep	379	70	30	5,686	Straight	16	24	Jan. & July	No	Req	27	No
St. Francis Hospital	New York	Chrch	425	88	12	5,189	Mixed	8	24	Jan. & July	No	None	15	No
St. Luke's Hospital [1]	New York	Chrch	540	69	31	8,254	Mixed	16	24	Jan. & July	No	Req	46	No
St. Vincent's Hospital	New York	Chrch	465	62	38	9,287	Rotating	32	24	Jan. & July	No	Req	31	No
Sydenham Hospital [1]	New York	Indep	200	20	80	3,926	Rotating	8	24-27	Jan. & July	No	Req	21	No
United Hospital	Port Chester	Indep	236	31	69	3,738	Rotating	5	12	July	No	Req	35	$40(d)
Vassar Brothers Hospital	Poughkeepsie	Indep	258	35	65	3,849	Rotating	4	12	July	No	Req	21	$30(e)
Jamaica Hospital	Richmond Hill	Indep	171	32	68	3,538	Rotating	8	18	(1-e)	No	Req	25	$15
Genesee Hospital	Rochester	Indep	225	66	34	4,109	Rotating	6	12	July	No	Req	35	$15
Highland Hospital	Rochester	Indep	177	89	11	3,229	Rotating	5	12	July	No	Req	28	$22.50
Rochester General Hospital	Rochester	Indep	365	67	33	6,022	Rotating	8	12	July	No	Req	64	$15
St. Mary's Hospital	Rochester	Chrch	201	61	39	3,678	Rotating	5	12	July	No	Req	24	$25(q)
Strong Memorial and Rochester Municipal Hospitals [1]	Rochester	Ind-Cy	560	80	20	10,950	Straight	31	12	July & Sept.	No	Req	63	No
Ellis Hospital [1]	Schenectady	Indep	285	23	77	6,055	Rotating	8	12	July	No	Req	19	No
St. Vincent's Hospital	Staten Island	Chrch	255	66	34	5,438	Rotating	6	18	(1-e)	No	Req	15	No
Staten Island Hospital	Staten Island	Indep	275	79	21	5,160	Mixed	6	18	(1-e)	No	Req	31	No
General Hospital of Syracuse	Syracuse	Indep	110	78	22	2,466	Rotating	2	12	July	No	Req	28	$10
Hospital of the Good Shepherd, Syracuse University	Syracuse	Indep	242	36	64	4,826	Rotating	8	12	July & Aug.	(60)	None	34	No
St. Joseph Hospital	Syracuse	Chrch	231	81	19	4,720	Mixed	6	12	July	No	None	26	No
Syracuse Memorial Hospital	Syracuse	Indep	250	79	21	5,591	Rotating	7	12	July	No	Req	34	No
Samaritan Hospital	Troy	Indep	185	71	29	2,290	Rotating	3	12	(1-h)	No	Req	21	$40
Troy Hospital	Troy	Chrch	262	50	50	3,274	Rotating	4	12	July	(55)	Op	40	$30
Grasslands Hospital [1]	Valhalla	Co	903	91	9	6,663	Rotating	18	18	Jan. & July	No	Req	67	(r)
St. John's Riverside Hospital [1]	Yonkers	Chrch	223	48	52	3,937	Rotating	5	12-15	Jan. & July	No	Req	35	$50
Yonkers General Hospital	Yonkers	Indep	197	77	23	2,543	Rotating	4	12	Jan. & July	No	Req	20	$25-50(d)
NORTH CAROLINA														
Duke Hospital [1]	Durham	Indep	456	95	5	5,823	Straight	20	12	July & Sept.	No	Req	59	No
Lincoln Hospital (col.)	Durham	Indep	108	85	15	1,554	Rotating	3	12	(1-t)	No	Req	36	$5
Watts Hospital	Durham	Indep	210	68	32	3,357	Rotating	4	12	July	No	Req	35	$15(d)
Highsmith Hospital	Fayetteville	Indep	106	71	29	1,973	Mixed	2	12	July	No	Req	21	$25
L. Richardson Memorial Hospital [1] (col.)	Greensboro	Indep	64	86	14	832	Rotating	2	12	July	No	Req	23	$10
Rex Hospital	Raleigh	CyCo	126	59	41	2,780	Mixed	3	12	July	No	Req	16	$25-50
St. Agnes Hospital (col.)	Raleigh	Chrch	100	25	75	846	Mixed	3	12	July & Sept.	No	Req	34	No
Park View Hospital [1]	Rocky Mount	Indep	110	61	39	1,831	Mixed	2	12	July	No	Req	23	$25
Davis Hospital	Statesville	Indep	142	..	..	2,561	Mixed	1	12	July	No	Req	15	No
James Walker Memorial Hospital	Wilmington	Indep	152	71	29	3,551	Rotating	4	12	July	No	Req	15	$25(d)
City Memorial Hospital	Winston-Salem	City	236	67	33	3,290	Rotating	7	12	July	(61)	Req	21	$15(s)
NORTH DAKOTA														
St. John's Hospital	Fargo	Chrch	165	36	64	2,632	Mixed	2	12	July	No	None	53	$20
OHIO														
City Hospital	Akron	Indep	350	60	40	5,664	Rotating	12	12	July	(62)	Req	64	$20
Peoples Hospital	Akron	Indep	156	27	73	2,370	Rotating	4	12	July	(62)	Req	33	$25
St. Thomas Hospital	Akron	Chrch	183	68	32	2,811	Rotating	4	12	July	No	None	52	$20
Mercy Hospital	Canton	Chrch	206	79	21	3,646	Mixed	2	12	July	No	None	31	$25
Bethesda Hospital [1]	Cincinnati	Chrch	236	68	32	4,593	Rotating	7	12	July	(51)	Req	17	$25(t)
Christ Hospital	Cincinnati	Chrch	366	71	29	4,397	Rotating	8	12	July	(63)	Req	26	$22.50
Cincinnati General Hospital [1]	Cincinnati	City	925	100		16,777	Rotating	30	12	July	(64)	Req	45	No
Deaconess Hospital	Cincinnati	Chrch	175	57	43	2,984	Mixed	4	12	July	(65)	None	38	$25
Good Samaritan Hospital	Cincinnati	Chrch	535	71	29	7,834	Rotating	12	12	June	No	Req	24	$12.50
Jewish Hospital	Cincinnati	Indep	262	62	38	3,505	Rotating	8	12	July	(66)	None	23	$20
St. Mary Hospital	Cincinnati	Chrch	210	88	12	3,529	Rotating	5	12	July	No	Req	21	$25
Charity Hospital	Cleveland	Chrch	301	51	49	4,546	Rotating	12	12	July	(67)	Req	38	No
City Hospital [1]	Cleveland	City	1,585	100		11,747	Rotating	36	12	July	No	Req	44	No
Huron Road Hospital [1]	Cleveland	Indep	120	36	64	1,972	Rotating	4	12	July	No	Req	57	$50
Mount Sinai Hospital [1]	Cleveland	Indep	270	87	13	6,671	Rotating	10	12	July	(68)	Req	33	$10
St. Alexis Hospital	Cleveland	Chrch	220	28	72	3,472	Rotating	8	12	July	(67)	Req	15	$10
St. John's Hospital	Cleveland	Chrch	207	94	6	3,677	Rotating	6	12	July	No	None	18	$12.50
St. Luke's Hospital	Cleveland	Chrch	394	20	80	5,915	Rotating	15	12	July	No	Req	28	No
University Hospitals [1]	Cleveland	Indep	539	55	45	12,003	Rotat&Str	36	12-24	(1-r)	(69)	Req	59	(n)
Woman's Hospital [1]	Cleveland	Indep	120	87	13	1,613	Rotating	3	12	July	(70)	None	33	$25
Grant Hospital	Columbus	Indep	333	76	24	4,661	Rotating	8	12	July	No	None	22	$25
Mount Carmel Hospital	Columbus	Chrch	239	13	87	3,531	Rotating	5	12	July	(71)	None	16	$25
St. Francis Hospital	Columbus	Chrch	158	..	..	3,284	Rotating	8	12	July	(72)	Op	39	$125 yr.
Starling-Loving University Hospital	Columbus	State	276	74	26	4,742	Rotating	9	12	July	No	Req	41	(f)
White Cross Hospital	Columbus	Chrch	271	18	82	3,451	Rotating	6	12	July	No	Req	31	$25
Miami Valley Hospital	Dayton	Indep	383	74	26	6,951	Rotating	12	12	July	(73)	Req	66	$25
St. Elizabeth Hospital	Dayton	Chrch	420	23	77	6,603	Rotating	8	12	July	No	Req	26	No
Elyria Memorial Hospital	Elyria	Indep	154	..	..	1,827	Mixed	1	12	July	No	Op	16	$25
Mercy Hospital	Hamilton	Chrch	220	80	20	2,025	Rotating	2	12	July	No	Req	30	$25(u)
Springfield City Hospital	Springfield	City	263	73	27	2,912	Rotating	6	12	July	No	Req	24	$25
Flower Hospital	Toledo	Chrch	125	57	43	1,787	Rotating	2	12	July	No	None	37	$50
Lucas County General Hospital	Toledo	Co	315	100		4,454	Rotating	10	12	July	No	Req	38	$25
Mercy Hospital	Toledo	Chrch	126	78	22	1,832	Rotating	2	12	July	No	Op	17	$25
St. Vincent's Hospital [1]	Toledo	Chrch	354	63	37	8,260	Rotating	8	12	July	No	Req	15	$25
Toledo Hospital	Toledo	Indep	275	74	26	2,172	Rotating	6	12	July	No	None	35	$25
St. Elizabeth's Hospital	Youngstown	Chrch	300	..	..	3,559	Rotating	5	12	July	No	Req	18	$20(e)
Youngstown Hospital	Youngstown	Indep	450	52	48	5,845	Rotating	11	12	July	No	Req	33	$20
OKLAHOMA														
Oklahoma City General Hospital	Oklahoma City	Indep	112	..	..	2,977	Mixed	4	12	July	No	Req	17	$25
St. Anthony Hospital	Oklahoma City	Chrch	290	74	26	5,731	Mixed	8	12	July	No	None	35	$15
State University Hospitals [1]	Oklahoma City	State	467	91	9	5,955	Rotating	14	12	July	No	Req	42	$10
Wesley Hospital	Oklahoma City	Indep	175	..	..	3,292	Mixed	3	12	July	No	None	21	$25(f)
Morningside Hospital	Tulsa	Indiv	249	45	55	4,850	Rotating	4	12	July	No	Req	18	$25(d)
St. John's Hospital	Tulsa	Chrch	273	56	44	3,960	Rotating	5	12	July	No	Req	29	$25(w)
OREGON														
Emanuel Hospital	Portland	Chrch	304	..	..	4,602	Rotating	7	12	July	(74)	None	35	$20
Good Samaritan Hospital	Portland	Chrch	330	9	91	4,941	Rotating	7	12	July	No	None	39	$20
Portland Sanitarium and Hospital	Portland	Chrch	135	41	59	3,596	Mixed	2	12	July	No	None	59	$75(a)
St. Vincent's Hospital	Portland	Chrch	402	..	..	8,221	Rotating	7	12	July	No	Req	43	$25
Univ. of Oregon Medical School Hosps. [1]	Portland	Co-Sta	408	99	1	6,960	Rotating	16	12	July	(75)	Req	43	$20
PENNSYLVANIA														
Abington Memorial Hospital	Abington	Indep	275	61	39	4,663	Rotating	4	24	July	No	Req	42	No
Allentown Hospital [1]	Allentown	Indep	325	53	47	5,977	Rotating	8	12	July	No	Req	31	No
Sacred Heart Hospital	Allentown	Chrch	300	71	29	3,068	Rotating	5	12	July	No	Req	30	No
Altoona Hospital	Altoona	Indep	180	48	52	2,395	Rotating	5	12	July	No	Req	35	$25
Mercy Hospital [1]	Altoona	Indep	124	52	48	2,076	Rotating	4	12	July	No	Req	17	$25
St. Luke's Hospital	Bethlehem	Indep	216	73	27	3,844	Rotating	8	12	July	No	Req	42	(d)
Braddock General Hospital [1]	Braddock	Indep	136	72	28	1,849	Rotating	4	12	July	No	Req	40	...

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free and Part Pay	Classification of Patients Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
PENNSYLVANIA—Continued														
Bryn Mawr Hospital	Bryn Mawr	Indep	262	40	60	4,478	Rotating	8	12	July	No	Req	34	No
Chester Hospital [1]	Chester	Indep	285	62	38	3,479	Rotating	6	12	July	No	Req	18	$15
G. F. Geisinger Memorial Hospital	Danville	Indep	200	34	66	3,860	Rotating	8	12	July	No	Req	36	No
Easton Hospital [1]	Easton	Indep	220	57	43	4,698	Rotating	7	12	July	No	Req	35	(u)
Hamot Hospital	Erie	Indep	255	67	33	5,400	Rotating	7	12	July	No	Req	33	$25
St. Vincent's Hospital	Erie	Chrch	214	57	43	5,868	Rotating	8	12	July	No	Req	24	$15(e)
Harrisburg Hospital	Harrisburg	Indep	271	59	41	4,628	Rotating	8	12	July	No	Req	33	$25
Harrisburg Polyclinic Hospital [1]	Harrisburg	Indep	188	48	52	3,260	Rotating	4	12	July	No	Req	26	$30
Conemaugh Valley Memorial Hospital	Johnstown	Indep	290	64	36	4,534	Rotating	6	12	July	No	Req	21	No
Lancaster General Hospital [1]	Lancaster	Indep	273	48	52	4,853	Rotating	6	12	July	No	Req	49	$17.50
McKeesport Hospital	McKeesport	Indep	263	62	38	3,967	Rotating	6	12	July	No	Req	15	$25
Jameson Memorial Hospital	New Castle	Indep	154	31	69	2,510	Rotating	4	12	July	No	None	21	$15
Montgomery Hospital [1]	Norristown	Indep	110	51	49	2,547	Rotating	4	12	July	No	Req	32	$30
Chestnut Hill Hospital	Philadelphia	Indep	114	42	58	2,216	Rotating	4	12	July	No	Req	25	$50
Frankford Hospital	Philadelphia	Indep	142	51	49	3,073	Rotating	7	12	July	No	Req	19	No
Germantown Dispensary and Hospital	Philadelphia	Indep	260	67	33	7,530	Rotating	12	24	July	No	Req	29	No
Graduate Hospital of the University of Pennsylvania	Philadelphia	Indep	475	43	57	7,325	Rotating	16	24	July	(76)	Req	49	No
Hahnemann Hospital	Philadelphia	Indep	592	42	58	12,835	Rotating	24	24	July	(111)	Req	46	No
Hospital of the Protestant Episcopal Church	Philadelphia	Chrch	525	96	4	6,282	Rotating	16	24	Jan. & July	No	Req	39	No
Hosp. of the Univ. of Pennsylvania [1]	Philadelphia	State	594	60	40	9,253	Rotating	28	24	July	No	Req	54	No
Hosp. of the Woman's Medical College [2]	Philadelphia	Indep	173	87	13	2,455	Rotating	6	12	July & Sept.	No	Req	43	No
Jefferson Medical College Hospital	Philadelphia	Indep	688	76	24	14,323	Rotating	28	27	June	No	Req	44	No
Jewish Hospital [1]	Philadelphia	Indep	422	42	58	6,556	Rotating	18	24	June	(77)	Req	44	No
Lankenau Hospital	Philadelphia	Indep	298	48	52	3,963	Rotating	10	24	July	(78)	Req	40	No
Mercy Hospital [1] (col.)	Philadelphia	Indep	120	96	4	1,624	Rotating	5	12	July	No	Req	53	No
Methodist Episcopal Hospital [1]	Philadelphia	Chrch	247	55	45	3,433	Rotating	7	12	July	No	Req	34	No
Misericordia Hospital [1]	Philadelphia	Chrch	286	89	11	4,309	Rotating	9	12	July	No	Req	32	No
Mount Sinai Hospital	Philadelphia	Indep	316	61	39	6,063	Rotating	14	12	June	No	Op	73	No
Northeastern Hospital	Philadelphia	Indep	102	34	66	2,615	Rotating	4	12	July	No	Req	19	$40
Pennsylvania Hospital	Philadelphia	Indep	560	87	13	9,228	Rotating	18	24	(1-w)	(79)	Req	45	No
Philadelphia General Hospital	Philadelphia	City	2,515	98	2	27,073	Rotating	60	24	July	(77)	Req	47	No
Presbyterian Hospital	Philadelphia	Chrch	426	56	44	5,058	Rotating	12	24	July	No	Req	35	No
St. Agnes Hospital	Philadelphia	Chrch	455	68	32	5,528	Rotating	12	12	July	No	Req	22	No
St. Joseph's Hospital	Philadelphia	Chrch	221	60	40	2,008	Rotating	6	12	July	No	Req	19	No
St. Luke's and Children's Hospital	Philadelphia	Indep	263	67	33	3,507	Rotating	6	12	July	No	Req	15	No
St. Mary's Hospital	Philadelphia	Chrch	226	41	59	2,880	Rotating	7	12	July	No	Req	27	No
Temple University Hospital	Philadelphia	Indep	441	90	10	6,361	Rotating	16	24	July	(80)	Req	41	No
Woman's Hospital [2]	Philadelphia	Indep	125	60	40	2,488	Rotating	6	12	(1-h)	(81)	Req	36	No
Women's Homeopathic Hospital [1]	Philadelphia	Indep	200	77	23	2,915	Rotating	4	12	July	No	Req	22	$20
Allegheny General Hospital [1]	Pittsburgh	Indep	405	58	42	5,814	Rotating	12	12	July	No	Req	25	No
Homeopathic Medical and Surgical Hospital and Dispensary [1]	Pittsburgh	Indep	315	56	44	4,984	Rotating	6	12	July	(82)	Req	27	No
Mercy Hospital	Pittsburgh	Chrch	670	65	35	8,541	Rotating	20	12	July	(83)	Req	30	No
Montefiore Hospital	Pittsburgh	Indep	225	52	48	4,183	Rotating	7	12	July	No	Req	20	$10
Passavant Hospital [1]	Pittsburgh	Chrch	138	63	37	2,119	Rotating	5	12	July	No	Req	31	$10
Pittsburgh Hospital	Pittsburgh	Indep	206	43	57	3,083	Rotating	5	12	July	No	Req	28	$25
Presbyterian Hospital [1]	Pittsburgh	Chrch	153	51	49	2,354	Rotating	18	12	July	(84)	Req	28	No
St. Francis Hospital	Pittsburgh	Chrch	487	30	70	5,801	Rotating	14	13	July	(82)	Req	36	No
St. John's General Hospital	Pittsburgh	Chrch	202	36	64	2,729	Rotating	4	12	July	No	Req	25	$25
St. Joseph Hospital	Pittsburgh	Chrch	140	93	7	1,753	Rotating	4	12	July	No	Req	25	No
St. Margaret Memorial Hospital	Pittsburgh	Chrch	152	82	18	1,962	Rotating	4	12	July	No	Req	40	No
South Side Hospital	Pittsburgh	Indep	225	76	24	3,640	Rotating	7	12	July	No	Req	28	No
Western Pennsylvania Hospital [1]	Pittsburgh	Indep	667	50	50	8,007	Rotating	18	12	July	No	Req	22	No
Pottsville Hospital [1]	Pottsville	Indep	140	71	29	2,517	Rotating	4	12	July	No	Req	28	$25
Reading Hospital	Reading	Indep	268	57	43	4,209	Rotating	8	12	July	No	Req	70	No
St. Joseph's Hospital	Reading	Chrch	205	69	31	3,356	Rotating	6	12	July	(85)	Req	71	No
Robert Packer Hospital	Sayre	Indep	280	55	45	5,386	Rotating	8	12	July	No	Req	35	No
Hahnemann Hospital	Scranton	Indep	125	62	38	3,001	Rotating	4	12	July	No	Req	15	$13.50
Moses Taylor Hospital	Scranton	Indep	100	90	10	1,490	Rotating	3	12	July	(86)	Req	29	$27
Scranton State Hospital	Scranton	State	180	86	14	4,203	Rotating	8	12	July	No	Req	16	$8.33
Uniontown Hospital	Uniontown	Indep	225	30	70	2,845	Rotating	5	12	July	No	Req	58	$25
Washington Hospital	Washington	Indep	166	80	20	2,249	Rotating	4	12	July	No	Req	46	$25
Chester County Hospital [1]	West Chester	Indep	162	64	36	2,523	Rotating	4	12	July	No	Req	34	$25
Mercy Hospital [1]	Wilkes-Barre	Chrch	220	71	29	4,026	Rotating	6	12	July	No	Req	23	(o)
Wilkes-Barre General Hospital	Wilkes-Barre	Indep	407	69	31	6,788	Rotating	10	12	July	No	Req	34	No
Columbia Hospital [1]	Wilkinsburg	Chrch	214	53	47	2,252	Rotating	5	12	July	No	Req	29	$20
Williamsport Hospital [1]	Williamsport	Indep	275	57	43	3,226	Rotating	5	12	July	No	Req	33	$25
Windber Hospital	Windber	Indep	111	10	90	1,319	Rotating	2	12	June	No	Req	28	No
York Hospital	York	Indep	190	72	28	3,375	Rotating	5	12	July	No	Req	27	$25
RHODE ISLAND														
Memorial Hospital	Pawtucket	Indep	196	46	54	2,362	Rotating	6	12	(1-u)	No	Req	24	No
Homeopathic Hospital	Providence	Indep	200	87	13	3,158	Rotating	4	12	July	No	Req	21	$50
Rhode Island Hospital	Providence	Indep	600	..	..	10,465	Rotating	28	24	Monthly	(87)	Req	41	No
St. Joseph's Hospital	Providence	Chrch	343	57	43	3,783	Rotating	6	24	(1-r)	No	Req	26	No
SOUTH CAROLINA														
Roper Hospital	Charleston	Indep	300	87	13	5,990	Rotating	15	12	July	No	Req	24	$10
Columbia Hospital	Columbia	Co	295	59	41	3,206	Mixed	3	12	July	No	Req	19	$40(d)
Greenville City Hospital	Greenville	City	149	74	26	3,415	Rotating	4	12	July	No	Req	34	$25
Spartanburg General Hospital [1]	Spartanburg	Co	280	72	28	3,901	Rotating	5	12	July	No	Req	15	$15(d)
TENNESSEE														
Baroness Erlanger Hospital	Chattanooga	CyCo	246	71	29	5,269	Rotating	10	12	Jan. & July	(88)	Req	23	$25
Baptist Memorial Hospital	Memphis	Chrch	400	51	49	11,846	Rotating	12	18	(1-e)	No	None	18	$20
Memphis General Hospital	Memphis	City	400	100		13,281	Rotating	18	18	Monthly	No	Req	16	$20
Methodist Hospital	Memphis	Chrch	185	..	..	3,643	Mixed	2	12	Jan. & July	No	None	24	$35
St. Joseph's Hospital	Memphis	Chrch	286	73	27	5,206	Mixed	4	12	(1-e)	No	Req	19	$35
George W. Hubbard Hospital (col.)	Nashville	Indep	163	98	2	2,367	Rotating	6	12	July	No	Req	33	$15
Nashville General Hospital	Nashville	City	305	91	9	6,046	Rotating	10	12	July	No	Req	17	$25
St. Thomas Hospital	Nashville	Chrch	225	94	6	4,088	Mixed	5	12	July	No	None	33	$40
Vanderbilt University Hospital	Nashville	Indep	210	67	33	4,116	Straight	10	12	July	(89)	Req	63	$23.75
TEXAS														
Hotel Dieu Hospital	Beaumont	Chrch	186	67	33	2,340	Mixed	2	12	July	No	Req	28	$30
Baylor University Hospital [1]	Dallas	Chrch	379	23	77	8,080	Rotating	11	12	July	No	Req	36	$25
Parkland Hospital	Dallas	CyCo	293	100		7,152	Mixed	16	12	Jan. & July	(90)	Req	17	$25
St. Paul's Hospital	Dallas	Chrch	340	41	59	5,919	Mixed	8	12	July	No	Req	18	$25
El Paso City-County Hospital	El Paso	CyCo	165	100		3,174	Rotating	4	12	July	No	Req	60	$50
City and County Hospital	Fort Worth	CyCo	125	100		3,713	Rotating	4	12	July	No	Req	16	$25
Harris Clinic-Hospital	Fort Worth	Indiv	100	..	..	2,106	Mixed	2	12	July	No	Req	19	No
St. Joseph's Hospital	Fort Worth	Chrch	201	53	47	2,506	Mixed	2	12	July	No	None	16	$40

Numerical and other references will be found on page 596.

Name of Hospital	Location	Control	Capacity	Classification of Patients Percentage: Free and Part Pay	Classification of Patients Percentage: Full Pay	Total Patients Treated	Type of Internship	Number of Interns	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month
TEXAS—Continued														
John Sealy Hospital [1]	Galveston	City	374	..	..	4,196	Rotating	8	12	June & July	(91)	Req	42	No
St. Mary's Infirmary	Galveston	Chrch	165	33	67	1,855	Mixed	3	12	June	No	None	21	$30
Hermann Hospital	Houston	Indep	200	92	8	3,529	Rotating	5	12	July	No	Req	51	$25
Jefferson Davis Hospital	Houston	CyCo	204	100		6,398	Rotating	10	12	July	No	None	26	$25
Medical and Surgical Hospital	San Antonio	Indep	115	21	79	3,794	Mixed	2	12	July	No	Req	24	$25
Robert B. Green Memorial Hospital	San Antonio	CyCo	237	100		3,237	Rotating	10	12	July	No	Req	20	$10
Santa Rosa Hospital	San Antonio	Chrch	386	..	..	5,934	Mixed	6	12	July	No	Req	22	$25
Gulf, Colorado and Santa Fe Hospital	Temple	Indus	150	..	..	1,049	Rotating	1	12	July	(92)	Req	50	$50
Kings Daughters Hospital	Temple	Indep	118	..	..	2,556	Mixed	2	12	July	No	Req	24	$50
Scott and White Hospital	Temple	Indep	183	..	..	2,771	Rotating	6	12	July	(92)	Req	16	$50
UTAH														
Thomas D. Dee Memorial Hospital	Ogden	Chrch	185	..	..	4,432	Rotating	5	12	July & Oct.	No	Req	20	$25
Dr. W. H. Groves Latter-Day Saints Hospital	Salt Lake City	Chrch	466	7	93	5,236	Rotating	8	12	July	(93)	Req	24	$15(f)
Holy Cross Hospital	Salt Lake City	Chrch	270	50	50	2,780	Mixed	2	12	July	No	None	26	$35(e)
St. Mark's Hospital [1]	Salt Lake City	Chrch	150	6	94	3,638	Mixed	2	12	July	(94)	Op	15	$35
Salt Lake General Hospital	Salt Lake City	Co	222	97	3	2,872	Rotating	6	12	July	No	Req	25	$25(i)
VERMONT														
Bishop DeGoesbriand Hospital [1]	Burlington	Chrch	132	83	17	2,592	Mixed	3	12	July	No	None	19	$25
Mary Fletcher Hospital	Burlington	Indep	150	65	35	3,026	Rotating	5	12	July & Sept.	No	Req	38	$50
VIRGINIA														
Hospital of St. Vincent de Paul	Norfolk	Chrch	250	65	35	3,463	Rotating	5	12	July	No	Req	43	$25
Norfolk Protestant Hospital	Norfolk	Chrch	175	62	38	3,371	Rotating	4	12	July	No	Req	28	$25
Johnston-Willis Hospital	Richmond	Indep	126	10	90	2,374	Rotating	3	12	July	No	Req	28	$25
Medical College of Virginia, Hospital Division [1] (Memorial, Dooley, St. Philip and Crippled Children's Hospitals)	Richmond	Indep	456	89	11	8,448	Mix&Rotat	20	12	July	(95)	Req	21	No
Stuart Circle Hospital	Richmond	Indep	102	54	46	2,076	Mixed	3	12	July	No	Req	45	$25
Jefferson Hospital	Roanoke	Indiv	110	..	..	1,804	Mixed	2	12	July	No	None	33	$40
University of Virginia Hospital [1]	University	State	315	68	32	6,059	Rotating	13	12	July	(96)	Req	43	No
WASHINGTON														
Columbus Hospital	Seattle	Chrch	236	..	..	2,377	Mixed	3	12	July	No	None	27	$25
King County Hospital Unit No. 1 [1] (Harborview)	Seattle	CyCo	445	100		10,871	Rotating	17	18	Jan. & July	(97)	Req	36	$30
Providence Hospital	Seattle	Chrch	450	..	..	5,096	Rotating	6	12	July	(98)	None	31	$30
Seattle General Hospital	Seattle	Chrch	120	..	..	2,240	Rotating	3	12	July	(99)	None	25	$30
Swedish Hospital	Seattle	Indep	228	3	97	3,204	Rotating	8	12	July & Oct.	(100)	None	25	$30
Virginia Mason Hospital	Seattle	Indep	180		100	2,710	Rotating	4	12	July	No	None	39	$30
Deaconess Hospital	Spokane	Chrch	257	31	69	3,835	Rotating	4	12	June & July	(101)	None	36	$25
Sacred Heart Hospital	Spokane	Chrch	340	61	39	5,047	Rotating	4	12	July	(102)	None	23	$25
St. Luke's Hospital	Spokane	Indep	200	49	51	2,507	Rotating	3	12	July	(103)	None	39	$35
Northern Pacific Beneficial Asso. Hosp	Tacoma	Indep	116	55	45	1,891	Rotating	2	12	July	(104)	Req	18	$25
Pierce County Hospital	Tacoma	Co	220	100		3,729	Rotating	2	12	July	No	Op	32	$25-45
St. Joseph's Hospital	Tacoma	Chrch	350	53	47	3,530	Rotating	2	12	July	No	Req	38	$30
Tacoma General Hospital	Tacoma	Indep	209	..	..	4,815	Rotating	4	12	July	(105)	Req	34	$35
WEST VIRGINIA														
Charleston General Hospital	Charleston	Indep	165	14	86	2,691	Rotating	4	12	July	(106)	Req	34	$25
Chesapeake and Ohio Railway Hospital	Huntington	Indus	130	..	..	2,254	Mixed	3	12	July	No	Req	44	$40
Ohio Valley General Hospital	Wheeling	Indep	270	49	51	4,171	Rotating	4	12	July	No	Req	25	$25
Wheeling Hospital	Wheeling	Chrch	327	53	47	5,052	Rotating	4	12	July	No	Req	28	$40
WISCONSIN														
St. Elizabeth Hospital	Appleton	Chrch	250	19	81	2,735	Rotating	2	12	June & July	No	None	31	$25
Luther Hospital	Eau Claire	Indep	155		100	2,115	Mixed	2	12	July	No	None	27	$25(d)
St. Agnes Hospital	Fond du Lac	Chrch	250	32	68	4,018	Mixed	3	12	July	No	None	33	$25
Mercy Hospital	Janesville	Chrch	150	50	50	2,917	Mixed	2	12	Jan. & July	No	None	26	$12.50
La Crosse Lutheran Hospital	La Crosse	Chrch	146	..	..	2,198	Mixed	2	12	July	No	Op	15	$25
St Francis Hospital [1]	La Crosse	Chrch	355	..	..	5,793	Rotating	4	12	July	No	Req	26	No
Madison General Hospital	Madison	Indep	172	22	78	3,661	Rotating	4	12	July	No	None	24	$25
Methodist Hospital	Madison	Chrch	120	17	83	1,973	Rotating	3	12	July	No	Op	38	$30
St. Mary's Hospital	Madison	Chrch	205	33	67	3,215	Rotating	4	12	July	No	Req	56	$25
State of Wisconsin General Hospital [1]	Madison	State	652	..	..	11,704	Rotating	16	12	July	No	Op	72	No
St. Joseph's Hospital	Marshfield	Chrch	175	43	57	3,388	Mixed	3	12	July	No	None	15	$20
Columbia Hospital	Milwaukee	Indep	205	18	82	2,115	Rotating	8	24	July	(107)	Req	49	$25
Evangelical Deaconess Hospital	Milwaukee	Chrch	170	12	88	2,195	Rotating	3	12	June	No	None	15	$25
Milwaukee Hospital "The Passavant"	Milwaukee	Chrch	250	69	31	3,952	Rotating	7	12	July	No	Req	32	$25
Misericordia Hospital	Milwaukee	Chrch	180	93	7	2,008	Rotating	2	12	July	No	None	19	$15
Mount Sinai Hospital	Milwaukee	Indep	170	79	21	3,919	Mixed	5	12	July	No	Req	32	$25
St. Joseph's Hospital	Milwaukee	Chrch	395	40	60	5,049	Rotating	6	12	July	No	Req	17	$25
St. Luke's Hospital	Milwaukee	Chrch	117	13	87	2,448	Mixed	2	12	July	No	None	22	$25
Mercy and St. Mary's Hospitals	Oshkosh	Chrch	180	..	..	2,695	Mixed	3	12	July	No	Op	37	$30
Milwaukee County General Hospital [1]	Wauwatosa	Co	1,050	95	5	17,854	Rotating	39	12	June	No	Req	25	$10
CANAL ZONE														
Gorgas Hospital	Ancon	Fed	880	96	4	11,496	Rotating	7	12	July	No	Op	59	$115
HAWAII														
Queen's Hospital	Honolulu	Indep	320	31	69	5,344	Rotating	7	18	(1-e)	(108)	Req	52	$56.25
PHILIPPINE ISLANDS														
Philippine General Hospital	Manila	Fed	703	92	8	15,422	Rotating	31(v)	12	March	(109)	Req	79	No

HOSPITALS APPROVED FOR INTERNSHIPS IN THE DOMINION OF CANADA

For the benefit of graduates of approved medical colleges who desire an internship in Canada, the Council on Medical Education and Hospitals of the American Medical Association has declared that hospitals which conform to the standards of the Department of Hospital Service of the Canadian Medical Association should be regarded as giving an internship equivalent in educational value to that offered by hospitals in the United States approved for intern training by the Council. It is understood, however, that this statement applies only to hospitals that are unqualifiedly "Approved" under the Canadian plan and does not apply to that group referred to as "Recommended."

The following list of hospitals, revised to Jan. 1, 1934, has been furnished by the Department of Hospital Service:

Name of Hospital	Location	Name of Hospital	Location	Name of Hospital	Location
Victoria General Hospital	Halifax, N. S.	Grace Hospital	Toronto, Ont.	Hotel Dieu of St. Joseph Hosp.	Windsor, Ont.
St. John General Hospital	St. John, N. B.	Hospital for Sick Children	Toronto, Ont.	MacKellar General Hospital	Fort William, Ont.
Hospital du St. Sacrament	Quebec, Que.	St. Joseph's Hospital	Toronto, Ont.	Children's Hospital	Winnipeg, Man.
Children's Memorial Hosp.	Montreal, Que.	St. Michael's Hospital	Toronto, Ont.	Winnipeg General Hospital	Winnipeg, Man.
Hospital Notre Dame	Montreal, Que.	Toronto East General Hosp.	Toronto, Ont.	St. Boniface Hospital	St. Boniface, Man.
Hospital Ste. Justine	Montreal, Que.	Toronto General Hospital	Toronto, Ont.	Regina General Hospital	Regina, Sask.
Hospital St. Luc	Montreal, Que.	Toronto Western Hospital	Toronto, Ont.	Edmonton General Hospital	Edmonton, Alta.
Montreal General Hospital	Montreal, Que.	Hamilton General Hospital	Hamilton, Ont.	Misericordia Hospital	Edmonton, Alta.
Royal Victoria Hospital	Montreal, Que.	St. Joseph's Hospital	London, Ont.	Royal Alexandria Hospital	Edmonton, Alta.
Ottawa Civic Hospital	Ottawa, Ont.	Victoria General Hospital	London, Ont.	University of Alberta Hosp.	Edmonton, Alta.
Kingston General Hospital	Kingston, Ont.	Metropolitan General Hosp.	Walkerville, Ont.	St. Paul's Hospital	Vancouver, B. C.

Numerical and other references will be found on page 596.

NOTES

1. Women interns admitted.
2. Women interns only.
(a) In lieu of maintenance.
(b) Bonus of $110.
(c) Bonus of $10 for satisfactory records.
(d) Bonus of $100.
(e) Bonus of $60.
(f) Bonus of $50.
(g) Bonus of $300.
(h) Bonus of $150.
(i) Bonus of $120.
(j) Subject to readjustment by common council.
(k) Bonus of $240.
(m) Bonus of $10.
(n) $15 a month after completion of 12 months' service.
(o) Bonus of $40.
(p) Bonus of $50 on completion of 2½ years' internship.
(q) Bonus of $20.
(r) $15 per month for first six months, $20 for 12 months; bonus of $120.
(s) Bonus of $125.
(t) Bonus of $75.
(u) Bonus of $200.
(v) All internships reserved for the fifth year students of the College of Medicine, University of the Philippines.
(w) Bonus of $75, if merited.
(1-a) January, April, May, July, August and November.
(1-b) January, March, July, September and November.
(1-c) Quarterly.
(1-d) January, March, May, July, September and November.
(1-e) January, April and July.
(1-f) January, July and October.
(1-g) January, July and September.
(1-h) July, August and September.
(1-i) January, May and September.
(1-j) February, June and October.
(1-k) April, July and September.
(1-m) July, August, September and October.
(1-n) January, April, June and October.
(1-o) Every two months.
(1-p) January, July and August.
(1-q) February, May, August and November.
(1-r) March, July and November.
(1-s) January, June and September.
(1-t) June, July and August.
(1-u) April, June and August.
(1-v) Medicine: January, April, June and September. Surgery: March, July and November.
(1-w) Every six weeks.

Affiliation as Referred to in Column Headed: "Affiliated—For What Service"

3. Patton State Hospital, Patton, psychiatry.
4. Los Angeles Receiving Hospital, emergency service.
5. Children's Hospital and City Obstetrical Service, Los Angeles.
6. Internship in these hospitals includes service in Alameda County Hospital, Oakland, Fairmont Hospital, San Leandro, and Arroyo Sanatorium, Livermore.
7. Woman's Hospital, Pasadena, obstetrics.
8. Napa State Hospital, Imola, and Hassler Health Home, Redwood City, psychiatry and tuberculosis.
9. St. Francis Hospital and the University of California Hospital, San Francisco, obstetrics and pediatrics.
10. Shriners Hospital for Crippled Children, San Francisco, orthopedics.
11. Santa Barbara General Hospital, tuberculosis, psychiatry and communicable diseases.
12. Santa Barbara Cottage Hospital, diabetes and medicine.
13. Emergency Hospital, Bridgeport.
14. Hartford Municipal Hospital, Department of Communicable Diseases.
15. Columbia Hospital for Women and Lying-In Asylum and Children's Hospital, Washington, obstetrics and pediatrics.
16. Grady Hospital, Atlanta, pediatrics.
17. Misericordia Hospital and Home for Infants, Chicago, obstetrics, gynecology and pediatrics.
18. Winfield Sanatorium, Winfield, tuberculosis.
19. Winfield Sanatorium, Winfield, and Municipal Contagious Disease Hospital, Chicago.
20. White Memorial Hospital, Los Angeles, obstetrics and pediatrics.
21. Internship in the University of Chicago Clinics includes service in Albert Merritt Billings Hospital, Bobs Roberts Memorial Hospital, Nancy Adele McElwee Memorial and Gertrude Dunn Hicks Memorial Hospital and Max Epstein Clinic; also Chicago Lying-In Hospital.
22. The Indiana University Hospitals include the Robert W. Long Hospital, the James Whitcomb Riley Hospital for Children, the William H. Coleman Hospital for Women, and the Indiana Rotary Convalescent Home.
23. Broadlawns, Des Moines, tuberculosis and communicable disease units.
24. Watkins Memorial Hospital, Lawrence.
25. Sedgwick County Hospital, Wichita.
26. Salvation Army Home and Hospital and Sedgwick County Hospital, Wichita, obstetrics and general.
27. Children's Free Hospital, Louisville, pediatrics.
28. Johns Hopkins Hospital, Baltimore, urology.
29. Johns Hopkins Hospital, pathology.
30. Baltimore City Hospital, communicable diseases.
31. Boston City Hospital includes the Main Hospital, South Department for Contagious Diseases, Haymarket Square Relief Station, East Boston Relief Station and the Sanatorium Division for Tuberculosis.
32. Boston State Hospital and Worcester State Hospital, psychiatry.
33. Evangeline Booth Maternity Hospital and Home, Boston.
34. Shriners Hospital for Crippled Children, Health Department Hospital and Wesson Maternity Hospital, Springfield, orthopedics, communicable diseases and obstetrics.
35. Mercywood Sanitarium, Ann Arbor, psychiatry and neurology.
36. Herman Kiefer Hospital, Detroit.
37. Children's Hospital and Herman Kiefer Hospital, Detroit, pediatrics, obstetrics and communicable diseases.
38. Herman Kiefer Hospital, communicable diseases, and St. Joseph's Retreat, Dearborn, neurology and psychiatry.
39. Children's Hospital, Detroit, pediatrics.
40. Sunshine Sanatorium and Municipal Isolation Hospital, Grand Rapids, tuberculosis and communicable diseases.
41. Ingham Sanatorium and Boy's Vocational School Hospital, Lansing, tuberculosis and otolaryngology.
42. Miller Memorial Hospital, Duluth, outpatient service.
43. Gillette State Hospital for Crippled Children, St. Paul, orthopedics and pediatrics.
44. Glen Lake Sanatorium, Oak Terrace, tuberculosis.
45. St. Anthony's Hospital, St. Louis, obstetrics, gynecology and pediatrics.
46. City Isolation Hospital, St. Louis Children's Hospital and Shriners Hospital for Crippled Children, communicable diseases, general surgery and orthopedic surgery.
47. Jewish Sanatorium, Robertson, tuberculosis.
48. Alexian Brothers Hospital, St. Louis, outpatient service.
49. Municipal Hospital, Atlantic City, and Atlantic County Hospital for Mental Diseases, Northfield, communicable diseases and psychiatry.
50. "Bergen Pines" Bergen County Hospital, Ridgewood, tuberculosis and communicable diseases.
51. Catherine Booth Home and Hospital, Cincinnati, obstetrics, gynecology and pediatrics.
52. Margaret Hague Maternity Hospital, Jersey City, obstetrics.
53. Allenwood Sanatorium, Allenwood, tuberculosis.
54. Jewish Maternity Hospital, New York City.
55. Anthony N. Brady Maternity Hospital, Albany.
56. Kingston Avenue Hospital, Brooklyn, communicable diseases.
57. St. Mary's Hospital and Providence Retreat, Buffalo, obstetrics and psychiatry.
58. Children's Hospital, Buffalo, pediatrics.
59. New York Ophthalmic Clinic, New York City.
60. Syracuse Memorial Hospital, City Hospital, and Syracuse Psychopathic Hospital, obstetrics, communicable diseases and psychiatry.
61. Forsyth County Tuberculosis Sanatorium, Winston-Salem.
62. Children's Hospital, Akron, pediatrics and orthopedics.
63. Children's Hospital, Cincinnati, pediatrics.
64. Christian R. Holmes Hospital, Hamilton County Tuberculosis Sanatorium, and Hamilton County Home and Chronic Disease Hospital, Cincinnati.
65. Longview State Hospital, Cincinnati, psychiatry.
66. Cincinnati General Hospital, pediatrics and otolaryngology.
67. St. Anne's Maternity Hospital, Cleveland.
68. City Hospital, Cleveland, psychiatry and communicable diseases.
69. University Hospitals of Cleveland include the Lakeside Hospital, Maternity Hospital, Babies and Childrens Hospital, Cleveland, and the Rainbow Hospital for Crippled and Convalescent Children, South Euclid.
70. Mt. Sinai Hospital, Cleveland, gynecology.
71. Children's Hospital, Columbus, pediatrics.
72. Starling-Loving University Hospital and Children's Hospital, Columbus, obstetrics and pediatrics.
73. Stillwater Sanatorium, Dayton, tuberculosis.
74. Shriners Hospital for Crippled Children, Portland, orthopedics.
75. University of Oregon Medical School Hospitals include Multnomah Hospital and Doernbecher Memorial Hospital for Children.
76. Hospital of the University of Pennsylvania, Philadelphia, obstetrics.
77. Philadelphia Hospital for Contagious Diseases.
78. Children's Hospital of the Mary J. Drexel Home, Philadelphia, pediatrics.
79. Children's Hospital, Philadelphia, pediatrics.
80. Shriners Hospital for Crippled Children and Philadelphia Hospital for Contagious Diseases.
81. Pennsylvania Hospital, Department for Mental and Nervous Diseases.
82. Municipal Hospital for Contagious Diseases, Pittsburgh.
83. Rosalia Foundling and Maternity Hospital and Municipal Hospital for Contagious Diseases, Pittsburgh.
84. Elizabeth Steel Magee Hospital, Children's Hospital, and Eye and Ear Hospital, Pittsburgh, obstetrics, gynecology, pediatrics and eye and ear.
85. Berks County Tuberculosis Sanatorium, Reading.
86. Pittston Hospital, Pittston, obstetrics.
87. Providence Lying-In Hospital.
88. Children's Hospital and Pine Breeze Sanatorium, Chattanooga, pediatrics and tuberculosis.
89. Willard Parker Hospital, New York City, pediatrics.
90. Woodlawn Sanatorium and Bradford Memorial Hospital for Babies, Dallas, tuberculosis and pediatrics.
91. Galveston State Psychopathic Hospital.
92. Gulf, Colorado and Santa Fe Hospital and the Scott and White Hospital affiliated furnish one internship.
93. Salt Lake City Emergency Hospital, general emergency service and Utah State Hospital, Provo, psychiatry.
94. Salt Lake General Hospital, pathology and obstetrics.
95. Pine Camp Hospital, Brook Hill, tuberculosis.
96. Blue Ridge Sanatorium, Charlottesville, tuberculosis.
97. Includes service in King County Hospital Unit No. 2, Seattle.
98. King County Hospital Unit No. 1, Seattle, outpatient service.
99. Children's Orthopedic Hospital and Florence Crittenton Home, Seattle, orthopedics, pediatrics and obstetrics.
100. Children's Orthopedic Hospital, Seattle, and Firland Sanatorium, Richmond Highlands, pediatrics, orthopedics, tuberculosis and communicable diseases.
101. Edgecliff Sanatorium and Shriners Hospital for Crippled Children, Spokane, tuberculosis and orthopedics.
102. Edgecliff Sanatorium and St. Luke's Hospital, Spokane, tuberculosis and psychiatry.
103. Edgecliff Sanatorium, Rivercrest Hospital, Salvation Army Women's Hospital and Home, and Florence Crittenton Home, Spokane, tuberculosis, communicable diseases and obstetrics.
104. Pierce County Hospital, Tacoma, obstetrics.
105. Pierce County Hospital, Tacoma, general, and Western State Hospital, Fort Steilacoom, psychiatry.
106. Hill Crest Sanatorium, Charleston, tuberculosis.
107. Milwaukee Children's Hospital and South View Isolation Hospital, Milwaukee.
108. Kauikeolani Children's Hospital, Honolulu, pediatrics.
109. Santol Tuberculosis Sanatorium, Santol.
110. St. Elizabeth Hospital, Elizabeth, obstetrics.
111. Allentown State Hospital, Allentown, psychiatry, and Philadelphia Hospital for Contagious Diseases.
112. Rockford Municipal Tuberculosis Sanatorium.

HOSPITALS APPROVED FOR RESIDENCIES IN SPECIALTIES

By the Council on Medical Education and Hospitals of the American Medical Association

Revised to Aug. 25, 1934

NOTE.—The following hospitals are considered in position to furnish acceptable residencies in the several specialties designated, for graduates who have already had a general internship or its equivalent in practice. A list of hospitals approved for internships will be found on page 588. Statistical material is based on reports received for the calendar year 1933. Reported salaries should be verified through correspondence with individual hospitals.

The abbreviations under the column headed "Control" are as follows:

Chrch	Church	Fed	Federal	Indiv	Individual
CyCo	City and county	Frat	Fraternal	Indus	Industrial
Co	County	Indep	Independent hospital association	USPH	United States Public Health Service

HOSPITALS, 377; RESIDENCIES, 2,373

		Control	Capacity	Classification of Patients — Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
ANESTHESIA														
Massachusetts General Hospital	Boston	Indep	405	53	34	13	...	....	1	Varies	12	289	57	$41.66 and up
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	...	....	1	Jan. & July	12	296	67	$80 and up
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	...	....	2	July	12	1,625	47	$100-150
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	....	2	Jan.	18-36	281	72	$43.66 and up
CARDIOLOGY														
Indiana University Hospitals [1]	Indianapolis	State	480	82	4	14	...	Yes	1	Jan.	12	157	49	$33.33
St. Francis Hospital	Pittsburgh	Chrch	487	22	8	70	...	Yes	1	Nov.	12	105	36	$50-150
COMMUNICABLE DISEASES														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	3,218	....	2	Jan. & July	Indef.	1,942	53	$10-75
Hospital for Children	San Francisco	Indep	259	13	22	65	101	....	1	Jan.	12	33	41	$25
Hartford Municipal Hospital, Department of Communicable Diseases	Hartford, Conn.	City	65	40	11	49	506	....	1	April	12	6	16	$100-125
Municipal Contagious Disease Hospital	Chicago	City	428	99	..	1	3,890	....	6	Jan. & July	6	79	53	$150
Boston City Hospital	Boston	City	1,838	88	..	12	1,936	....	3	Varies	Indef.	774	27	$79.17 and up
Belmont Hospital	Worcester, Mass.	City	275	100	..	..	...	....	1	Varies	Indef.	25	40	$133
Herman Kiefer Hospital	Detroit	City	1,400	98	..	2	...	....	6	July	12	174	36	$125-200
City Isolation Hospital	St. Louis	City	250	94	2	4	1,953	....	1	May	12	54	38	$150
Essex County Hosp. for Contag. Dis.	Belleville, N. J.	Co	550	93	6	1	3,212	....	1	Varies	6	38	31	$50
Kingston Avenue Hospital	Brooklyn	City	410	..	..	..	4,527	....	4	Varies	Indef.	57	23	$110-135
Willard Parker Hospital	New York City	City	424	99	1	..	...	....	8	Varies	12	106	46	$100-135.83
DERMATOLOGY-SYPHILOLOGY														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	457	Yes	2	Jan. & July	24	1,942	53	$10-75
Cook County Hospital [2]	Chicago	Co	3,300	100	..	..	...	No	2	Jan. & July	12	1,192	18	None
University of Chicago Clinics	Chicago	Indep	406	27	67	6	...	Yes	1	July	12	149	76	$112.50-220
Massachusetts General Hospital	Boston	Indep	405	53	34	13	...	Yes	1	Varies	12	289	57	$41.66 and up
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	1,805	Yes	2	March	12	348	50	$25
Minneapolis General Hospital	Minneapolis	City	674	98	2	..	284	Yes	1	Jan. & July	12-36	508	47	$25-50
Barnard Free Skin and Cancer Hosp.	St. Louis	Indep	44	100	..	..	...	Yes	1	Jan.	12	17	44	$25
Buffalo City Hospital [3]	Buffalo	CyCo	1,064	71	27	2	892	Yes	2	June	24	352	34	$50
Metropolitan Hospital [2]	New York City	City	1,620	100	..	..	497	Yes	1	Jan. & July	18	295	24	$75-117.90
Montefiore Hosp. for Chronic Diseases	New York City	Indep	706	84	5	11	...	Yes	1	Varies	12	345	63	$50-100
Stuyvesant Square Hospital	New York City	Indep	93	27	1	72	...	Yes	2	April & Oct.	12	4	13	$25 [4]
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	1	Jan. & July	12	323	53	$100-117.90
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	330	Yes	1	May	Indef.	675	45	None
City Hospital	Cleveland	City	1,585	..	..	..	...	Yes	2	Jan.	12	621	44	$46.50
University Hospitals	Cleveland	Indep	539	47	8	45	400	Yes	1	Jan.	12 [5]	335	65	$20-75
University of Virginia Hospital	University	State	315	22	46	32	111	Yes	1	Dec.	24	116	43	$25-75
EPILEPSY														
Monson State Hospital	Palmer, Mass.	State	1,510	95	..	5	1,855	....	2	Varies	Indef.	20	21	$160 and up
New Jersey State Village for Epileptics	Skillman	State	1,357	..	..	..	...	No	4	Varies	Indef.	0	0	$166.66
Craig Colony	Sonyea, N. Y.	State	2,247	95	4	1	...	No	1	Varies	Indef.	44	48	.....
FRACTURES														
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	2	Jan. & July	12	1,192	18	None
GYNECOLOGY (Also see Obstetrics-Gynecology)														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	1,235	Yes	2	Jan. & July	24-36	1,942	53	$10-75
Passavant Memorial Hospital	Chicago	Indep	250	5	1	94	773	Yes	1	Jan. & July	12	44	60	None
Indiana University Hospitals	Indianapolis	State	480	82	4	14	707	Yes	1	Jan.	12	157	49	$33.33
Touro Infirmary	New Orleans	Indep	366	35	39	26	807	Yes	1	Jan. & Feb.	24	99	38	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	5	June	Indef.	438	72	$41.66-83.33
Mercy Hospital	Baltimore	Chrch	264	46	14	40	473	Yes	1	Jan.	12	46	21	$10-25
University Hospital	Baltimore	State	275	56	25	19	...	Yes	1	Jan.	12	127	39	$25
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	2	April	12	430	41	$83.33-125
Jersey City Hospital	Jersey City	City	1,200	90	5	5	994	Yes	1	April & Nov.	12	197	22	$100 and up
Buffalo City Hospital [2, 3]	Buffalo	CyCo	1,065	71	27	2	1,153	Yes	2	June	24	352	34	$50
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	933	Yes	1	Dec.	12	171	38	$25-50
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	2	Varies	12-24	435	53	$45-120
New York Hospital	New York City	Indep	823	18	58	24	4,439	Yes	4	Feb.	12 [6]	183	58	$8.33-25
N. Y. Post-Grad. Med. School and Hosp.	New York City	Indep	415	12	4	84	447	....	1	March	12	115	36	$90.25
Sloane Hospital for Women	New York City	Indep	322	..	..	..	...	Yes	1	.....	42	11	15	$50-125
University Hospitals	Cleveland	Indep	539	47	8	45	1,127	Yes	3	Jan.	12 [5]	335	65	$20-75
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	813	Yes	1	Jan.	12	82	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	1,182	Yes	1	March	12	197	54	None
Elizabeth Steele Magee Hospital	Pittsburgh	Indep	427	63	4	33	936	Yes	1	April	12	57	25	$41.50
INDUSTRIAL SURGERY														
Golden State Hospital	Los Angeles	Indiv	71	2	..	98	964	Yes	1	Varies	Indef.	[16]	..	$100
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	...	Yes	1	March	12	314	38	$20.83
LEPROSY														
U. S. Marine Hospital	Carville, La.	USPH	425	100	..	..	369	....	1	Varies	Indef.	12	50	$316.66

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
MALIGNANT DISEASES														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	...	Yes	2	Jan. & July	24	1,942	53	$10-75
Albert Steiner Clinic for Cancer and Allied Diseases	Atlanta, Ga.	City	30	..	..	..	...	Yes	2	July	12-18	35	100	$50-75
Michael Reese Hospital	Chicago	Indep	629	62	20	18	...	Yes	3	Jan. & July	12	214	49	Up to $95
Collis P. Huntington Memorial Hosp.	Boston	Indep	25	15	4	81	1,616	Yes	4	Varies	Indef.	[16]	..	.....
Pondville Hospital	Wrentham, Mass.	State	115	..	..	..	1,203	Yes	6	Varies	24	154	60	$135
Barnard Free Skin and Cancer Hosp.	St. Louis	Indep	44	100	..	..	...	Yes	1	Jan.	12	17	44	$25
Jersey City Hospital	Jersey City	City	1,200	90	5	5	213	Yes	1	April & Nov.	18	197	22	$100 and up
Memorial Hospital for the Treatment of Cancer and Allied Diseases	New York City	Indep	109	6	47	47	...	Yes	9	Varies	12-48	68	58	$150 and up
New York City Cancer Institute Hosp.	New York City	City	202	100	..	..	1,058	Yes	5	Jan.	12	61	14	$114
Jeanes Hospital	Philadelphia	Indep	72	32	43	25	...	Yes	1	April	24	57	63	None to $50
MAXILLOFACIAL SURGERY														
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	...	Yes	1	Jan.	24	82	49	None
MEDICINE														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	1,750	Yes	1	Jan.	12	266	31	$30-45
Fresno County General Hospital	Fresno, Calif.	Co	523	98	2	..	1,304	Yes	1	Jan.	12	...	34	$75-135
Cedars of Lebanon Hospital	Los Angeles	Indep	280	21	6	73	950	Yes	1	Dec.	12	80	35	$100
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	6,873	Yes	5	Jan. & July	36	1,942	53	$10-75
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	1,027	Yes	2	July	12-60	38	30	$65-146.25
Las Encinas Sanitarium	Pasadena, Calif.	Indep	80	..	..	100	...	No	1	Varies	12	[16]	..	$100 and up
San Bernardino County Charity Hosp.	San Bernardino, Calif.	Co	302	100	..	..	630	Yes	1	Jan. or Feb.	12	149	50	$75
Hospital for Children	San Francisco	Indep	259	13	22	65	402	Yes	1	Jan.	12	33	41	$25
Mount Zion Hospital	San Francisco	Indep	198	22	15	63	1,161	Yes	1	Feb.	12	87	50	$50
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	2,806	Yes	8	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	1,689	Yes	5	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	923	Yes	6	Feb.	12	131	69	$25-75
Santa Clara County Hospital	San Jose, Calif.	Co	499	100	..	..	1,904	Yes	1	Dec.	12	228	56	$125
Colorado General Hospital	Denver	State	178	67	33	..	877	Yes	1	Dec.	12	162	82	$75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	992	Yes	6	Jan. & July	12	184	46	$100
Gallinger Municipal Hospital	Washington, D. C.	City	825	99	..	1	2,640	No	2	Jan.	12-24	644	53	$30-50
James M. Jackson Memorial Hosp.	Miami, Fla.	City	350	67 [9]	..	33	2,219	Yes	1	July	12	94	19	$100
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga.	City	266	100	..	..	1,491	Yes	2	Jan. or Feb.	12	161	22	Varies
University Hospital	Augusta, Ga.	City	267	70	30 [7]	..	1,427	Yes	3	Nov. or Dec.	12	143	27	$50-125
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	3	Jan. & July	12	1,192	18	None
Passavant Memorial Hospital	Chicago	Indep	250	5	1	94	1,124	Yes	2	Jan. & July	12	44	60	None
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	2,711	Yes	1	Varies	12	127	47	$50
Provident Hospital (col.)	Chicago	Indep	150	7	50	43	355	Yes	1	July	12	50	40	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	1,335	Yes	2	Varies	24-36	152	76	$50
St. Luke's Hospital	Chicago	Chrch	714	7	18	75	1,174	Yes	4	Jan.	12	96	37	None
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	4	July	12	149	76	$112.50-220
Evanston Hospital	Evanston, Ill.	Indep	271	7	53	40	785	Yes	1	March	12	68	66	.....
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	1,462	Yes	3	March	12	314	38	$20.83
Indiana University Hospitals	Indianapolis	State	480	82	4	14	640	Yes	2	Jan.	12	157	49	$33.33
University Hospitals	Iowa City	State	1,008	89	6	5	1,874	Yes	6	Jan.	12-36	301	57	Up to $70.83
Bell Memorial Hospital	Kansas City, Kan.	State	250	15	74	11	703	Yes	2	Dec.	12	173	83	$40-90
Louisville City Hospital	Louisville, Ky.	City	444	100	..	..	1,958	Yes	8	Feb.	12	337	36	$23 and up
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	6	May or June	Indef.	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	731	Yes	1	Jan. or Feb.	12	99	38	$25
Baltimore City Hospitals (General)	Baltimore	City	756	100	..	..	...	Yes	3	Dec.	12	280	29	$50
Church Home and Infirmary	Baltimore	Chrch	184	15	66	19	299	Yes	1	Jan.	12	48	46	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	9	June	Indef.	438	72	$41.66-83.33
Maryland General Hospital	Baltimore	Chrch	228	45	6	49	596	Yes	1	Dec.	12	37	16	$35
Mercy Hospital	Baltimore	Chrch	264	46	14	40	710	Yes	2	Jan.	12 [6]	46	21	$10-25
Provident Hosp and Free Disp. (col.)	Baltimore	Indep	129	88	3	9	...	Yes	1	Oct.	12	33	18	$25
St. Agnes Hospital	Baltimore	Chrch	212	39	36	25	772	Yes	1	Dec.	12	39	25	.....
St. Joseph's Hospital [28]	Baltimore	Chrch	290	48	10	42	616	Yes	1	Jan.	12	57	30	None
Sinai Hospital	Baltimore	Indep	269	51	10	39	969	Yes	1	Jan.	12	71	29	$50
South Baltimore General Hospital	Baltimore	Indep	115	34	40	26	239	Yes	1	Dec.	12	20	16	$50
Union Memorial Hospital	Baltimore	Indep	332	22	53	25	707	Yes	3	Jan.	24-48	89	39	$30-40
University Hospital	Baltimore	State	275	56	25	19	...	Yes	1	Jan.	12	127	39	$25
West Baltimore General Hospital	Baltimore	Indep	200	39	..	61	298	Yes	1	Jan.	12	21	22	$20-50
Beth Israel Hospital	Boston	Indep	200	22	7	71	1,121	Yes	1	Varies	12	96	41	$83.33
Boston City Hospital	Boston	City	1,838	88	..	12	9,516	Yes	11	Varies	12-36	774	30	$79.17 and up
Long Island Hospital	Boston	City	550	100	..	..	1,432	Yes	2	July	12-24	71	47	$112.50 & up
Massachusetts General Hospital	Boston	Indep	405	53	34	13	2,860	Yes	6	Varies	12-36	289	57	$41.66 & up
Massachusetts Memorial Hospitals	Boston	Indep	367	22	46	32	...	Yes	2	March	12	98	45	$100
Peter Bent Brigham Hospital	Boston	Indep	247	37	27	36	1,830	Yes	6	Varies	Indef.	170	64	$41.66-83.33
Truesdale Hospital	Fall River, Mass.	Indep	125	16	44	40	397	No	1	Jan. & July	12	48	43	None
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	6,897	Yes	8	March	12	348	50	$25
Battle Creek Sanitarium	Battle Creek, Mich.	Indep	1,013	5	35	60	...	No	1	Jan. or Feb.	12	7	26	$125-150
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	2	April	12	430	41	$83.33-125
Grace Hospital	Detroit	Indep	398	30	48	22	917	Yes	1	March	12	127	34	$25
Harper Hospital	Detroit	Indep	750	13	48	39	1,045	Yes	1	Feb.	Indef.	82	20	$72
Henry Ford Hospital	Detroit	Indep	610	..	42	58	1,483	No	2	Jan.	12-48	109	43	$110-125
Jefferson Clinic and Diagnostic Hosp.	Detroit	Indep	62	3	6	91	774	Yes	1	Feb.	12	5	13	$50
Providence Hospital	Detroit	Chrch	450	33	55	12	...	No	1	Jan.	12	95	33	$75
Hurley Hospital	Flint, Mich.	City	425	..	..	..	3,880	No	1	Feb.	12	183	35	$50
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	..	2,522	Yes	12	Jan. & July	12-36	508	47	$25-50
Ancker Hospital	St. Paul	CyCo	1,050	98	1	1	1,735	Yes	4	March	12	492	64	$40
Barnes Hospital	St. Louis	Chrch	270	29	6	65	2,141	Yes	2	Dec.	12	179	66	$75
Jewish Hospital	St. Louis	Indep	290	39	47	14	1,320	Yes	1	Dec.	12	63	38	$80
St. Louis City Hospital	St. Louis	City	885	100	..	..	5,687	Yes	2	March	12	382	25	$125
St. Louis City Hospital No. 2 (col.)	St. Louis	City	335	100	..	..	2,210	No	1	July	12	122	16	$125
St. Luke's Hospital	St. Louis	Chrch	210	20	29	51	771	Yes	1	Dec.	12	32	26	$50
St. Mary's Group of Hospitals	St. Louis	Chrch	457	39	19	42	1,901	Yes	6	Varies	24-36	155	47	$30-55
Jersey City Hospital	Jersey City	City	1,200	90	5	5	3,781	Yes	1	April & Nov.	12	197	22	$100 and up
Albany Hospital	Albany, N. Y.	Indep	537	6	80	14	1,487	Yes	1	Feb.	12	278	68	$50
Cumberland Hospital	Brooklyn	City	321	100	..	..	1,560	Yes	1	July	12	240	40	$130
Kings County Hospital	Brooklyn	City	1,660	..	..	..	7,827	Yes	4	Jan. & July	12	727	19	[8]
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	1,177	Yes	2	Feb.	12	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	1,517	Yes	4	June	24	352	34	$50
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	1,431	Yes	4	Dec.	12	171	38	$25-50
Millard Fillmore Hospital	Buffalo	Indep	309	26	32	42	735	Yes	2	Dec.	12-24	119	49	$50
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y.	Indep	460	..	..	..	1,749	No	1	July	Indef.	32	67	$50 and up

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients (Percentage) Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
MEDICINE—(Continued)														
Charles S. Wilson Memorial Hospital..	Johnson City, N. Y.....	Indep	219	2	3	95	1,232	Yes	1	Dec.	12	53	49	$75
Metropolitan Life Insurance Co. Sanat.	Mt. McGregor, N. Y.....	Indep	360	100	..	..	359	No	1	Varies	Indef.	[16]	..	$125 and up
Bellevue Hospital	New York City.....	City	2,084	100	..	..	13,188	Yes	3	Jan. & July	12	903	23	$83.33
Fifth Avenue Hospital.....	New York City.....	Indep	300	25	20	55	912	Yes	1	Jan.	12	23	15	$50
Metropolitan Hospital	New York City.....	City	1,620	100	..	..	3,135	Yes	2	Jan. & July	12	295	24	$75-117.90
Montefiore Hosp. for Chronic Diseases	New York City.....	Indep	706	84	5	11	...	Yes	2	Jan. & July	12	345	63	$50
Mount Sinai Hospital.....	New York City.....	Indep	754	90	5	5	4,085	Yes	1	Varies	12	435	53	$45-120
New York Hospital.....	New York City.....	Indep	823	18	58	24	1,295	Yes	8	Feb.	12 [6]	183	58	$8.33-25
N. Y. Post-Grad. Med. School and Hosp.	New York City.....	Indep	415	12	4	84	1,063	Yes	1	March	12	115	36	$90.25
Presbyterian Hospital	New York City.....	Indep	641	..	..	..	...	Yes	3	Jan. & July	36-72	199	43	$41.66-125
Rochester General Hospital.....	Rochester, N. Y.....	Indep	365	56	11	33	760	Yes	1	April	12	171	64	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.....	Indep	500	56	24	20	...	Yes	6	Feb.	12-36	352	63	$41.66 and up
Hospital of the Good Shepherd.....	Syracuse, N. Y.....	Indep	242	4	32	64	1,451	No	2	Dec.	12	81	34	$37.50-75
Grasslands Hospital	Valhalla, N. Y.....	Co	903	89	2	9	970	Yes	2	Jan. & July	Indef.	296	67	$80 and up
Duke Hospital	Durham, N. C.....	Indep	456	95 [9]	..	5	2,322	Yes	6	Dec.	12	269	59	$18.75-75
Davis Hospital	Statesville, N. C.....	Indep	142	..	..	..	...	Yes	1	Jan.	12	6	15	$50
City Hospital	Akron, O.....	Indep	350	48	12	40	1,076	Yes	1	Feb.	12	223	64	$50-100
Cincinnati General Hospital.....	Cincinnati.....	City	925	95	5	..	3,010	Yes	9	May	12-60	675	45	None
Deaconess Hospital	Cincinnati.....	Chrch	175	4	53	43	757	No	1	Dec.	12	68	38	$75
Good Samaritan Hospital.....	Cincinnati.....	Chrch	535	9	62	29	1,665	Yes	1	Dec.	12	62	24	$50-75
Jewish Hospital	Cincinnati.....	Indep	262	25	37	38	725	No	1	Dec.	12	34	23	$110
Charity Hospital	Cleveland.....	Chrch	301	51	..	49	...	Yes	3	Jan.	12	121	38	$50
City Hospital	Cleveland.....	City	1,585	..	..	..	2,345	Yes	5	Jan.	12	621	44	$46.50
Mount Sinai Hospital.....	Cleveland.....	Indep	270	30	57	13	...	Yes	1	Dec.	12	66	33	$50-85
St. Alexis Hospital	Cleveland.....	Chrch	220	25	3	72	862	Yes	1	Dec.	12	33	15	$50
St. John's Hospital	Cleveland.....	Chrch	207	11	83	6	586	No	1	Dec.	12	32	18	$50-100
St. Luke's Hospital	Cleveland.....	Chrch	394	14	6	80	1,099	Yes	2	Dec.	12	83	28	$25-75
University Hospitals	Cleveland.....	Indep	539	47	8	45	1,791	Yes	8	Jan.	12 [5]	335	65	$20-75
Starling-Loving University Hospital..	Columbus, O.....	State	276	60	14	26	...	No	2	Dec.	12-24	132	41	$83.33
Miami Valley Hospital.....	Dayton, O.....	Indep	383	54	20	26	1,286	Yes	1	Jan.	12	286	66	$100
State University Hospitals.....	Oklahoma City.....	State	467	57	34	9	1,127	Yes	2	Dec.	12	186	42	$25-50
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.....	Co	408	95	4	1	1,286	Yes	2	Feb.	24	182	42	$30-45
Geo. F. Geisinger Memorial Hospital..	Danville, Pa.....	Indep	200	24	10	66	1,052	Yes	1	Jan.	12	78	36	.....
Graduate Hospital of the Univ. of Pa.	Philadelphia.....	Indep	475	31	12	57	1,044	Yes	1	Jan.	12	82	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia.....	State	594	37	23	40	1,594	Yes	1	March	12	197	54	None
Jewish Hospital	Philadelphia.....	Indep	422	33	9	58	1,143	Yes	1	Jan. or Feb.	12	152	44	None
Philadelphia General Hospital.....	Philadelphia.....	City	2,515	..	..	..	5,897	Yes	1	July	12	1,625	47	$100-150
Allegheny General Hospital.....	Pittsburgh.....	Indep	405	57	1	42	772	Yes	1	Feb.	12	91	25	$81
Mercy Hospital	Pittsburgh.....	Chrch	670	40	25	35	1,452	Yes	1	Jan.	12	103	30	None [11]
St. Francis Hospital.....	Pittsburgh.....	Chrch	487	22	8	70	736	Yes	1	Nov.	12	105	36	$50-100
Western Pennsylvania Hospital.....	Pittsburgh.....	Indep	667	..	50	50	2,350	Yes	1	Jan.	12	92	22	$83.33
Reading Hospital	Reading, Pa.....	Indep	268	55	2	43	581	Yes	1	Jan.	12	155	70	$90-250
Memphis General Hospital.....	Memphis, Tenn.....	City	400	95	5	..	2,528	Yes	2	July	12	222	16	$81
Nashville General Hospital.....	Nashville, Tenn.....	City	305	91	..	9	1,849	Yes	2	Dec.	12	65	17	$75
Vanderbilt University Hospital.....	Nashville, Tenn.....	Indep	210	31	36	33	982	Yes	4	July	12	144	63	$41.66
Baylor University Hospital.....	Dallas, Tex.....	Chrch	379	12	11	77	2,039	Yes	1	April	12	97	36	$100
Parkland Hospital	Dallas, Tex.....	CyCo	293	93	7	..	1,423	Yes	1	June	12	113	17	$90
Medical College of Va. Hosp. Division	Richmond, Va.....	Indep	456	10	79	11	1,342	Yes	2	Feb.	12	117	21	$50
University of Virginia Hospital.....	University.....	State	315	22	46	32	1,164	Yes	1	Dec.	12	116	43	$25-75
State of Wisconsin General Hospital..	Madison.....	State	652	..	..	..	...	Yes	3	Jan.	12-36	281	72	$43.66 and up
St. Joseph's Hospital.....	Milwaukee.....	Chrch	395	22	18	60	4,314	Yes	1	Dec.	Indef.	26	17	$100
MENTAL DEFICIENCIES														
Michigan Home and Training School..	Lapeer, Mich.....	State	3,720	98	1	1	...	No	1	Varies	Indef.	17	26	$150
Rome State School.....	Rome, N. Y.....	State	2,840	99	..	1	4,266	No	4	Varies	Indef.	21	37	$166.66
Polk State School.....	Polk, Pa.....	State	3,000	92	6	2	...	Yes	1	June	Indef.	20	25	$75
METABOLIC DISEASES														
Sea View Hospital.....	Staten Island, N. Y.....	City	1,642	100	..	..	...	Yes	2	Jan. & July	12	323	53	$100-117.90
Philadelphia General Hospital.....	Philadelphia.....	City	2,515	..	..	..	...	Yes	1	July	12	1,625	47	$100-150
MIXED														
St. Luke's Hospital.....	San Francisco.....	Chrch	225	10	9	81	4,327	Yes	6	Jan.	12	55	31	$50-100
San Francisco Hospital.....	San Francisco.....	CyCo	1,408	100	..	..	...	Yes	3	Jan.	12	843	62	$50
St. Francis Hospital and Sanitarium..	Colorado Springs, Colo.	Chrch	138	18	57	25	805	Yes	1	.....	12	17	24	$30
Emory University Hospital.....	Emory University, Ga...	Indep	185	6	29	65	2,309	No	1	Dec.	12	32	37	$100
West Suburban Hospital.....	Oak Park, Ill.....	Indep	427	4	3	93	5,040	Yes	1	March or April	12	84	39	$25
Indianapolis City Hospital.....	Indianapolis.....	City	566	..	..	..	2,629	Yes	4	March	12	314	38	$20.83
Arnot-Ogden Memorial Hospital.....	Elmira, N. Y.....	Indep	213	9	54	37	3,946	Yes	1	March	12	48	29	$62.50
Jamaica Hospital	Richmond Hill, N. Y.....	Indep	171	31	1	68	3,538	Yes	1	Jan. & July	12	55	25	$140
Genesee Hospital	Rochester, N. Y.....	Indep	225	33	33	34	4,109	Yes	2	Jan.	12	64	35	$50
James Walker Memorial Hospital.....	Wilmington, N. C.....	Indep	152	65	6	29	3,551	Yes	1	Jan.	12	33	15	$100
Women's and Children's Hospital.....	Toledo, O.....	Indep	141	16	58	26	1,405	Yes	2	Feb.	12	32	43	$25
NEUROLOGY														
Los Angeles County Hospital [29].....	Los Angeles.....	Co	3,572	100	..	..	816	Yes	2	Jan. & July	24	1,942	53	$10-75
Research and Educational Hospital....	Chicago.....	State	382	100	..	..	...	Yes	1	Varies	12	152	76	$50
University Hospitals	Iowa City.....	State	1,008	89	6	5	761	Yes	2	Jan.	12	301	57	Up to $70.83
Boston City Hospital.....	Boston.....	City	1,838	88	..	12	1,047	Yes	2	Sept.	12	774	27	$79.17 and up
Massachusetts General Hospital.....	Boston.....	Indep	405	53	34	13	...	Yes	1	Varies	12	289	57	$41.66 and up
University Hospital	Ann Arbor, Mich.....	State	1,287	..	..	..	...	Yes	1	March	12	348	50	$25
Bellevue Hospital	New York City.....	City	2,084	100	..	..	...	Yes	4	Jan. & July	12	903	23	$83.33
Central Neurological Hospital.....	New York City.....	City	470	100	..	..	1,477	No	6	Jan.	12-24	108	31	$114
Metropolitan Hospital	New York City.....	City	1,620	100	..	..	697	Yes	1	Jan. & July	12-24	295	24	$75-117.91
Montefiore Hosp. for Chronic Diseases	New York City.....	Indep	706	84	5	11	...	Yes	2	Jan. & July	18	345	63	$50
Mount Sinai Hospital.....	New York City.....	Indep	754	90	5	5	...	Yes	3	Varies	12	435	53	$45-120
Neurological Institute of New York....	New York City.....	Indep	211	12	18	70	4,112	No	12	Jan. & July	24	75	51	$40 and up
Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases.....	Philadelphia.....	Indep	140	35	30	35	342	Yes	1	.....	12	[16]	..	$40
NEUROSURGERY														
University of California Hospital.....	San Francisco.....	State	287	..	..	..	279	Yes	1	Feb.	12	131	69	$25-75
Presbyterian Hospital [30]	Chicago.....	Chrch	462	26	46	28	...	Yes	1	Varies	12-24	127	47	$50
Boston City Hospital.....	Boston.....	City	1,838	88	..	12	1,047	Yes	1	Sept.	12	774	27	$79.17 and up
Neurological Institute of New York....	New York City.....	Indep	211	12	18	70	...	No	3	Jan. & July	24	75	51	$40 and up
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.....	Indep	560	56	24	20	...	Yes	1	Feb.	12-36	352	63	$41.66 and up
Medical College of Va. Hosp. Division	Richmond.....	Indep	456	10	79	11	...	Yes	2	Feb.	12	117	21	$50

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients (Percentage)			Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
				Free	Part Pay	Full Pay							
OBSTETRICS (Also see Obstetrics-Gynecology)													
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	3,644	Yes	3	Jan. & July	12-24	1,942	53	$10-75
Hospital for Children	San Francisco	Indep	259	13	22	65	676	Yes	1	Jan.	12	33	41	$25
Santa Clara County Hospital	San Jose, Calif	Co	499	100	..	..	700	Yes	1	Dec.	12	228	56	$125
Chicago Maternity Center [12]	Chicago	Indep	...	100	..	..	3,365	Yes	2	.....	12	6	100	None
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	4	Jan. & July	12	1,192	18	None
Provident Hospital (col.)	Chicago	Indep	150	7	50	43	264	Yes	1	July	12	50	40	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	744	Yes	2	Varies	12	152	76	$50
Indiana University Hospitals [1]	Indianapolis	State	480	82	4	14	1,044	Yes	1	Jan.	12	157	49	$83.33
Louisville City Hospital	Louisville, Ky	City	444	100	..	..	1,651	Yes	2	Feb.	12	337	36	$25 and up
Charity Hospital	New Orleans	State	1,809	100	..	..	9,035	Yes	2	May or June	24	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	911	Yes	1	Jan. or Feb.	12	99	38	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	3	June	Indef.	438	72	$41.66-83.33
Provident Hosp. and Free Disp. (col.)	Baltimore	Indep	129	88	3	9	...	Yes	1	Oct.	36	33	18	$25
Sinai Hospital	Baltimore	Indep	269	51	10	39	840	Yes	1	Jan.	12	71	29	$50
University Hospital	Baltimore	State	275	56	25	19	...	Yes	2	Jan.	12	127	39	$25
Boston Lying-in Hospital	Boston	Indep	217	10	90	..	2,610	Yes	2	May & Nov.	12	40	52	$125
Providence Hospital	Detroit	Chrch	450	33	55	12	...	No	1	Jan.	12	95	33	$75
Margaret Hague Maternity Hospital	Jersey City	Co	284	69	28	3	...	Yes	5	Varies	12	101	74	$100 [4]
Cumberland Hospital	Brooklyn	City	321	100	..	..	1,258	Yes	1	July	12	240	40	$130
Jewish Hospital	Brooklyn	Indep	674	38	11	51	2,536	Yes	1	Dec.	12	225	43	None
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	759	Yes	1	Feb.	12	175	46	$45
Methodist Episcopal Hospital	Brooklyn	Chrch	480	37	4	59	1,798	No	1	July	12	109	31	$100
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	981	Yes	2	June	24	352	34	$50
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	...	Yes	1	Dec.	12	171	38	$25-50
Lenox Hill Hospital	New York City	Indep	477	18	..	82	314	Yes	1	Varies	24	124	39	$90-128
New York Hospital	New York City	Indep	823	18	58	24	1,485	Yes	9	Feb.	12 [6]	183	58	$8.33-25
New York Nursery and Child's Hosp.	New York City	Indep	256	28	25	47	1,878	Yes	2	Varies	12	36	40	$50-75
Sloane Hospital for Women	New York City	Indep	322	..	..	..	...	Yes	6	.....	21-36	11	15	$50-125
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	2,427	Yes	1	May	12	675	45	None
Mt. Sinai Hospital	Cleveland	Indep	270	30	57	13	...	Yes	1	Dec.	12	66	33	$50-85
St. Ann's Maternity Hospital	Cleveland	Chrch	118	18	39	43	...	....	2	Feb.	12	8	21	$50
St. John's Hospital	Cleveland	Chrch	207	11	83	6	713	No	1	Dec.	12	32	18	$50-100
St. Luke's Hospital	Cleveland	Chrch	394	14	6	80	1,144	Yes	1	Dec.	12	83	28	$25-75
University Hospitals	Cleveland	Indep	539	47	8	45	1,958	Yes	5	Jan.	12 [5]	335	65	$20-75
Miami Valley Hospital	Dayton, O.	Indep	383	54	20	26	1,150	Yes	1	Jan.	24	286	66	$100
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	820	Yes	1	March	12	197	54	None
Elizabeth Steele Magee Hospital	Pittsburgh	Indep	427	63	4	33	3,068	Yes	3	April	12	57	25	$41.50
Memphis General Hospital	Memphis, Tenn	City	400	95	5	..	1,770	Yes	1	July	12	222	16	$81
Baylor University Hospital	Dallas, Tex	Chrch	379	12	11	77	989	Yes	1	April	12	97	36	$100
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	861	Yes	1	Feb.	12	117	21	$50
OBSTETRICS-GYNECOLOGY (Also see Obstetrics and Gynecology)														
Hillman Hospital	Birmingham, Ala	Co	475	100	..	..	2,741	Yes	2	Jan.	12	266	31	$30-45
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	444	Yes	2	July	48	38	30	$65-146.25
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	2,146	Yes	1	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	992	Yes	2	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	1,000	Yes	3	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn	Indep	504	12	76	12	1,294	Yes	1	Jan. & July	12-18	184	46	$100
Columbia Hospital for Women and Lying-In Asylum	Washington, D. C	Indep	200	..	54	46	2,660	Yes	4	Jan. & July	12-18	15	32	None
Gallinger Municipal Hospital	Washington, D. C	City	825	99	..	1	5,313	No	2	Jan.	12	644	53	$30-50
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga	City	266	100	..	..	2,304	Yes	2	Jan. or Feb.	12	161	22	Varies
University Hospital	Augusta, Ga	City	267	70	30 [7]	..	1,006	Yes	1	Nov. or Dec.	12	143	27	$50-125
Chicago Lying-in Hosp. and Disp.	Chicago	Indep	322	27	47	26	3,884	Yes	7	Jan. & July	24-36	8	67	$33.33-75
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	1,300	Yes	1	Varies	12-24	127	47	$50
St. Luke's Hospital	Chicago	Chrch	714	7	18	75	1,262	Yes	2	Jan.	12	96	37	None
University of Chicago Clinics (see Chicago Lying-in Hosp. and Disp.)	Chicago													
University Hospitals	Iowa City	State	1,008	89	6	5	2,843	Yes	6	Jan.	12-36	301	57	Up to $70.83
Bell Memorial Hospital	Kansas City, Kan	State	250	15	74	11	840	Yes	2	Dec.	12	173	83	$40-50
St. Joseph's Hospital	Baltimore	Chrch	290	48	10	42	945	Yes	1	Jan.	12	57	30	None
Massachusetts Memorial Hospitals	Boston	Indep	367	22	46	32	...	Yes	1	March	12	98	45	$100
University Hospital	Ann Arbor, Mich	State	1,287	..	..	..	2,550	Yes	2	March	12	348	50	$25
Grace Hospital	Detroit	Indep	398	30	48	22	1,403	Yes	1	March	12	127	34	$25
Harper Hospital	Detroit	Indep	750	13	48	39	...	Yes	2	Feb.	12-48	82	20	$72
Herman Kiefer Hospital [14]	Detroit	City	1,400	98	..	2	...	No	2	July	12-48	174	36	$125-200
Woman's Hospital	Detroit	Indep	320	11	10	79	...	Yes	8	Jan.	12-24	22	20	$35-40
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	..	1,240	Yes	2	Jan. & July	12-36	508	47	$25-50
Ancker Hospital [1]	St. Paul	CyCo	1,050	98	1	1	2,283	Yes	1	March	Indef.	492	64	$40
Jewish Hospital	St. Louis	Indep	290	49	47	14	803	Yes	1	Dec.	12	63	38	$80
St. Louis City Hospital	St. Louis	City	885	100	..	..	...	Yes	1	March	12	382	25	$125
St. Louis Maternity Hospital [15]	St. Louis	Indep	204	40	37	23	2,621	Yes	11	Varies	12-36	[16]	..	$25-57
St. Luke's Hospital	St. Louis	Chrch	210	20	29	51	730	Yes	1	Dec.	12	33	26	$50
St. Mary's Group of Hospitals	St. Louis	Chrch	457	39	19	42	1,074	Yes	6	Varies	24-36	155	47	$30-55
Albany Hospital	Albany, N. Y.	Indep	537	6	80	14	2,310	Yes	1	Feb.	12	278	68	$50
Kings County Hospital	Brooklyn	City	1,660	..	..	..	5,456	Yes	4	Jan. & July	12	727	19	[8]
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	1,317	Yes	1	Feb.	12	175	46	$45
Bellevue Hospital	New York City	City	2,084	100	..	..	4,728	Yes	2	Jan. & July	12	903	23	$83.33
Metropolitan Hospital	New York City	City	1,620	100	..	..	4,099	Yes	2	Jan. & July	24	295	24	$75-117.91
Sloane Hospital for Women	New York City	Indep	322	..	..	..	...	Yes	6	.....	12-24	11	15	$50-125
Woman's Hospital	New York City	Indep	303	7	60	33	...	Yes	9	Varies	24	7	63	$118.75
Rochester General Hospital	Rochester, N. Y.	Indep	365	56	11	33	...	Yes	1	April	12	171	64	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	5	Feb.	12-36	352	63	$41.66 and up
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	1,109	Yes	2	Dec.	12	160	59	$18.75-75
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	408	95	4	1	1,629	Yes	3	Feb.	36	182	42	$30-55
Kensington Hospital for Women	Philadelphia	Indep	101	27	16	57	1,463	Yes	2	July	12-24	12	32	$50-100
Pennsylvania Hospital	Philadelphia	Indep	560	51	36	13	2,423	Yes	2	Varies	12	197	45	Varies
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	4,721	Yes	1	July	12	1,625	47	$100-150
Nashville General Hospital	Nashville, Tenn	City	205	91	..	9	1,526	Yes	2	Dec.	12	65	17	$75
Vanderbilt University Hospital	Nashville, Tenn	Indep	210	31	36	33	611	Yes	3	July	12	144	63	$41.66
John Sealy Hospital	Galveston, Tex	City	374	78	..	22	921	Yes	1	March	12	132	42	None
University of Virginia Hospital	University	State	315	22	46	32	1,119	Yes	1	Dec.	12	116	43	$25-75
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	2	Jan.	12-24	281	72	$43.66 and up
Milwaukee County General Hospital	Wauwatosa, Wis	Co	1,050	94	1	5	3,232	Yes	1	May	12	283	25	$100

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients — Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
OPHTHALMOLOGY														
(Also see Opthalmology-Otolaryngology)														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	395	Yes	2	Jan. & July	24	1,942	53	$10-75
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	...	Yes	1	July	36	38	30	$65-146.25
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	425	Yes	2	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	116	Yes	1	Feb.	12	131	69	$25-75
Colorado General Hospital [1]	Denver	State	178	67	33	..	99	Yes	1	Dec.	24	162	82	$75
New Haven Hospital	New Haven, Conn	Indep	504	12	76	12	181	Yes	1	Jan. & July	12	184	46	$100
Episcopal Eye, Ear and Throat Hosp.	Washington, D. C.	Chrch	100	28	29	43	1,030	Yes	3	Mar., July, Nov.	12	[16]	..	[13]
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga.	City	266	100	..	..	171	Yes	1	Jan. or Feb.	12	161	22	Varies
Illinois Eye and Ear Infirmary	Chicago	State	200	..	..	..	...	Yes	1	Nov.	12	[16]	..	None
Michael Reese Hospital	Chicago	Indep	629	62	20	18	341	Yes	1	Jan. & July	12	214	49	Up to $95
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	...	Yes	2	Varies	12	127	47	None
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	3	July	12-24	149	76	$112.50-220
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	212	Yes	1	March	12	314	38	$20.83
University Hospitals	Iowa City	State	1,008	89	6	5	799	Yes	6	Jan.	36	301	57	Up to $70.83
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	5	June	Indef.	438	72	$41.66-83.33
Massachusetts Eye and Ear Infirmary	Boston	Indep	231	17	20	63	2,647	Yes	7	Varies	21	23	44	None
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	1,785	Yes	1	March	12	348	50	$25
Barnes Hospital	St. Louis	Chrch	270	29	6	65	...	Yes	1	Dec.	12	179	66	$75
Brooklyn Eye and Ear Hospital	Brooklyn	Indep	143	8	82	10	...	Yes	6	May & Nov.	15-18	[16]	..	None
Kings County Hospital	Brooklyn	City	1,660	..	..	..	126	Yes	1	Jan. & July	12	727	19	.....
Bellevue Hospital	New York City	City	2,084	100	..	..	730	Yes	5	Jan. & July	20	903	23	$83.33
Herman Knapp Memorial Eye Hosp.	New York City	Indep	50	21	66	13	799	Yes	2	.....	12	[16]	..	.....
Metropolitan Hospital	New York City	City	1,620	100	..	..	65	Yes	1	Jan. & July	12-24	295	24	$75-117.91
Mount Sinai Hospital	New York City	Indep	1,154	90	5	5	...	Yes	1	Varies	12	435	53	$45-120
New York Eye and Ear Infirmary	New York City	Indep	175	18	64	18	...	Yes	6	March & Sept.	18-21	[16]	..	None
Presbyterian Hospital	New York City	Indep	641	..	..	..	...	Yes	6	Jan. & July	36	199	43	$41.66 and up
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	6	24	20	...	Yes	1	Feb.	12-36	352	63	$41.66 and up
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	291	Yes	2	May	12-24	675	45	None
University Hospitals	Cleveland	Indep	539	47	8	45	328	Yes	2	Jan.	12 [5]	335	65	$20-75
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	408	95	4	1	87	Yes	1	Feb.	12	182	42	$40
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	347	Yes	1	Jan.	12	82	49	None
Wills Hospital	Philadelphia	Indep	200	86	..	14	3,398	Yes	7	Quarterly	18	[16]	..	None
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	171	Yes	1	Feb.	12	117	21	$50
OPHTHALMOLOGY-OTOLARYNGOLOGY														
(Also see Ophthalmology and Otolaryngology)														
Hospital for Children	San Francisco	Indep	259	13	22	65	...	Yes	1	Jan.	12	33	41	$25
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	6	Jan. & July	12	1,192	18	None
Illinois Eye and Ear Infirmary	Chicago	State	200	..	..	..	4,767	Yes	11	Nov.	12-30	[16]	..	None
Passavant Memorial Hospital	Chicago	Indep	250	5	1	94	...	Yes	1	Jan. & July	12	44	60	None
St. Luke's Hospital	Chicago	Chrch	714	7	18	75	1,893	Yes	2	Jan.	12	96	37	None
Indiana University Hospitals	Indianapolis	State	480	82	4	14	1,675	Yes	1	Jan.	12	157	49	$33.33
Eye, Ear, Nose and Throat Hospital	New Orleans	Indep	70	15	50	35	...	Yes	7	Varies	12	3	33	None
Touro Infirmary	New Orleans	Indep	366	35	39	26	1,413	Yes	1	Jan. or Feb.	12	99	38	$25
Baltimore Eye, Ear and Throat Charity Hospital	Baltimore	Indep	60	..	..	..	2,470	Yes	3	Jan.	12-24	[16]	..	None
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33
Grace Hospital	Detroit	Indep	398	30	48	22	1,097	Yes	1	March	12	127	34	$25
Harper Hospital	Detroit	Indep	750	13	48	39	2,382	Yes	3	Feb.	12-48	82	20	$72
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	..	605	Yes	2	Jan. & July	12-36	508	47	$25-50
Ancker Hospital	St. Paul	CyCo	1,050	98	1	1	1,023	Yes	1	March	12	492	64	$40
Jewish Hospital	St. Louis	Indep	290	39	47	14	944	Yes	1	Dec.	12	63	38	$80
St. Louis City Hospital	St. Louis	City	885	100	..	..	1,673	Yes	1	March	12	382	25	$125
Jersey City Hospital	Jersey City	City	1,200	90	5	5	3,818	Yes	1	April & Nov.	20	197	22	$100 and up
Newark City Hospital	Newark, N. J.	City	770	100	..	..	...	No	1	July	12	368	30	None
Newark Eye and Ear Infirmary	Newark, N. J.	Indep	66	33	4	63	...	Yes	3	Feb.,June,Oct.	12	13	43	None
Kings County Hospital	Brooklyn	City	1,660	..	..	..	2,254	Yes	1	Jan. & July	12	727	19	[8]
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	1,215	Yes	1	Feb.	12	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	1,399	Yes	5	June	24	352	34	$50
Harlem Eye and Ear Hospital	New York City	Indep	50	..	..	..	1,112	Yes	3	Jan., June, Sept.	12	[16]	..	None
Manhattan Eye, Ear and Throat Hosp.	New York City	Indep	216	14	69	17	...	Yes	13	June & Dec.	18-60	9	19	None
New York Polyclinic Medical School and Hospital	New York City	Indep	345	20	22	58	2,125	Yes	4	Jan.,May,Sept.	12-24	45	24	None
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	764	Yes	1	Jan. & July	12	296	67	$80-200
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	...	Yes	1	Dec.	12	160	59	$18.75-75
State University Hospitals	Oklahoma City	State	467	57	34	9	515	Yes	1	Dec.	12	186	42	$25-50
Eye and Ear Hospital	Pittsburgh	Indep	55	19	49	32	2,884	No	3	Varies	24	[16]	..	None
Memphis Eye, Ear, Nose and Throat Hospital	Memphis, Tenn.	Indep	69	47	11	42	2,009	Yes	3	May & Oct.	18	[16]	..	None
University of Virginia Hospital	University	State	315	22	46	32	900	Yes	1	Dec.	12	116	43	$25-75
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	2	Jan.	24	281	72	$43.66 and up
Milwaukee County General Hospital	Wauwatosa, Wis.	Co	1,050	94	1	5	732	Yes	1	May	12	283	25	$100
ORTHOPEDICS														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	209	Yes	1	Jan.	12	266	31	$36-45
Children's Hospital	Los Angeles	Indep	230	61	29	10	265	Yes	1	March or April	16	154	92	$40-140
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	3,249	Yes	3	Jan. & July	24	1,942	53	$10-75
Orthopaedic Hospital-School	Los Angeles	Indep	85	83	12	5	1,729	Yes	4	.....	24-60	[16]	..	$50 and up
Shriners Hospital for Crippled Children	San Francisco	Frat	60	100	..	..	329	Yes	1	Jan.	12	[16]	..	$60
University of California Hospital	San Francisco	State	287	..	..	..	204	Yes	1	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	444	Yes	1	Jan. & July	12	184	46	$100
Children's Memorial Hospital [1]	Chicago	Indep	264	68	31	1	...	Yes	1	Varies	18	120	66	$64.13
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	1	Jan. & July	12	1,192	18	None
Research and Educational Hospital	Chicago	State	382	100	..	..	194	Yes	2	Varies	12	152	76	$50
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	4	July	12-24	149	76	$112.50-220
Indiana University Hospitals	Indianapolis	State	480	82	4	14	818	Yes	2	Jan.	12	157	49	$33.33
University Hospitals	Iowa City	State	1,008	89	6	5	2,489	Yes	3	Jan.	12-36	301	57	Up to $70.83
Shriners Hospital for Crippled Children	Shreveport, La.	Frat	60	100	..	..	187	Yes	1	Varies	12	[16]	..	$100
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	3	June	Indef.	438	72	$41.66-83.33
Boston City Hospital	Boston	City	1,838	88	..	12	...	Yes	1	Varies	Indef.	774	27	$79.17 and up
Children's and Infants' Hospitals	Boston	Indep	333	3	48	49	554	Yes	1	Varies	12	118	78	$56
Massachusetts General Hospital	Boston	Indep	405	53	34	13	526	Yes	1	Varies	12	289	57	$41.66 and up
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33-125

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
ORTHOPEDICS—(Continued)														
Gillette State Hospital for Crippled Children	St. Paul	State	250	100	..	..	...	Yes	1	Jan. & July	12	[16]	..	$100
Shriners Hospital for Crippled Children	St. Louis	Frat	120	100	..	..	504	Yes	1	.....	24	[16]	..	$180
Jersey City Hospital	Jersey City	City	1,200	90	5	5	1,195	Yes	1	April & Nov.	18	197	22	$100 and up
New Jersey Orthopaedic Hospital and Dispensary	Orange, N. J.	Indep	86	58	38	4	447	Yes	1	Jan.	18	0	0	$50-100
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	388	Yes	2	Feb.	12	175	46	$45
Bellevue Hospital	New York City	City	2,084	100	..	..	125	Yes	3	Jan. & July	18	903	23	$83.33
Hospital for Joint Diseases	New York City	Indep	355	20	35	45	2,275	Yes	8	Feb.	12-24	56	46	$25-50
Metropolitan Hospital	New York City	City	1,620	100	..	..	447	Yes	1	Jan. & July	12-24	295	24	$75-117.91
N. Y. Orthopaedic Disp. and Hospital [1]	New York City	Indep	302	3	62	35	1,953	Yes	6	Varies	36-60	[16]	..	$50-100
N. Y. Post-Grad. Med. School and Hosp.	New York City	Indep	415	12	4	84	200	Yes	1	March	12	115	36	$80-25
New York Society for the Relief of the Ruptured and Crippled [17]	New York City	Indep	269	22	30	48	1,461	Yes	7	Jan. & July	12-18	14	34	.....
Rochester General Hospital	Rochester, N. Y.	Indep	365	56	11	33	242	Yes	1	April	12	171	64	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	1	Feb.	12-36	352	63	$41.66 and up
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	2	Jan. & July	12	323	53	$100-117.50
New York State Reconstruction Home	West Haverstraw, N. Y.	State	170	99	..	1	153	Yes	3	Jan. & July	18	[16]	..	$125-150
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	353	Yes	1	May	24	675	45	None
Mount Sinai Hospital	Cleveland	Indep	270	30	57	13	...	Yes	1	Dec.	12	66	33	$50-85
University Hospitals	Cleveland	Indep	539	47	8	45	1,724	Yes	1	Jan.	12 [5]	335	65	$20-75
State University Hospitals	Oklahoma City	State	467	57	34	9	779	Yes	3	Dec.	12	186	42	$25-50
Shriners Hospital for Crippled Children	Portland, Ore.	Frat	50	100	..	..	...	Yes	1	March	12	[16]	..	$50
Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases	Philadelphia	Indep	140	35	30	35	235	Yes	1	.....	12	[16]	..	$40
Children's Hospital	Pittsburgh	Indep	196	60	11	29	174	Yes	1	July	12	40	29	$47
Texas Scottish Rite Hospital for Crippled Children	Dallas	Frat	40	100	..	..	486	Yes	1	July	18	[16]	..	$80
University of Virginia Hospital	University	State	315	22	46	32	319	Yes	1	Dec.	24	116	43	$25-75
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	2	Jan.	24	281	72	$43.66 and up
OTOLARYNGOLOGY **(Also see Ophthalmology-Otolaryngology)**														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	583	Yes	1	Jan.	12	266	31	$36-45
Children's Hospital	Los Angeles	Indep	230	61	29	10	...	Yes	1	March or April	12	154	92	$40-140
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	1,249	Yes	3	Jan. & July	12-24	1,942	53	$10-75
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	...	Yes	1	July	12	38	30	$65-146.25
San Francisco Hospital	San Francisco	CyCo	845	100	..	..	1,441	Yes	2	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	1,156	Yes	2	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	607	Yes	1	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	1,014	Yes	1	Jan. & July	12	184	46	$100
Episcopal Eye, Ear and Throat Hosp.	Washington, D. C.	Chrch	100	28	29	43	4,090	Yes	3	Mar.,July,Nov.	12	[16]	..	[13]
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga.	City	266	100	..	..	629	Yes	2	Jan. or Feb.	12	161	22	Varies
Illinois Eye and Ear Infirmary	Chicago	State	200	..	..	..	...	Yes	1	Nov.	18	[16]	..	None
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	...	Yes	1	Varies	12	127	47	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	1,132	Yes	1	Varies	12	152	76	$50
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	1	July	12	149	76	$112.50-220
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	1,816	Yes	1	March	12	314	38	$20.83
University Hospitals	Iowa City	State	1,008	89	6	5	1,891	Yes	8	Jan.	27-60	301	57	Up to $70.83
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	3	May or June	24	1,400	46	Varies
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	3	June	Indef.	438	72	$41.66-83.33
University Hospital	Baltimore	State	275	56	25	19	...	Yes	1	Jan.	12	127	29	$25
Beth Israel Hospital	Boston	Indep	200	22	7	71	1,059	Yes	1	Varies	12	96	41	$83.33
Massachusetts Eye and Ear Infirmary	Boston	Indep	231	17	20	63	4,627	Yes	7	Varies	21	23	44	None
Memorial Hospital	Worcester, Mass.	Indep	215	17	9	74	1,277	Yes	1	March	12	75	54	$41.66
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	2,654	Yes	2	March	12	348	50	$25
Barnes Hospital	St. Louis	Chrch	270	29	6	65	...	Yes	1	Dec.	12	179	66	$75
Brooklyn Eye and Ear Hospital	Brooklyn	Indep	143	8	82	10	...	Yes	8	May & Nov.	16	3	21	None
Kings County Hospital	Brooklyn	City	1,660	..	..	..	2,128	Yes	1	Jan. & July	12	727	19	[8]
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	1,012	Yes	1	Dec.	12	171	38	$25-50
Bellevue Hospital	New York City	City	2,084	100	..	..	3,442	Yes	6	Jan. & July	24	903	23	$83.33
Lenox Hill Hospital	New York City	Indep	477	18	..	82	813	Yes	1	Varies	24	124	39	$90-128
Metropolitan Hospital	New York City	City	1,620	100	..	..	859	Yes	1	Jan. & July	12-24	295	24	$75-117.91
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	2	Varies	12-24	435	53	$45-120
New York Eye and Ear Infirmary	New York City	Indep	175	18	64	18	...	Yes	6	March & Sept.	18-21	0	0	None
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	1	Feb.	12-36	352	63	$41.66 and up
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	2	Jan. & July	12	323	53	$100-117.50
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	1,460	Yes	2	May	12-24	675	45	None
St. Luke's Hospital	Cleveland	Chrch	394	14	6	80	1,160	Yes	2	Dec.	12	83	28	$25-50
University Hospitals	Cleveland	Indep	539	47	8	45	1,724	Yes	3	Jan.	12 [5]	335	65	$20-75
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	408	95	4	1	402	Yes	1	Feb.	12	182	42	$40
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	2,967	Yes	1	Jan.	24	82	49	None
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	1,172	Yes	1	Feb.	12	117	21	$50
PATHOLOGY														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	...	Yes	1	Jan.	12	266	31	$36-45
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	...	Yes	4	Jan. & July	24	1,942	53	$10-75
Mount Zion Hospital	San Francisco	Indep	198	22	15	63	...	Yes	2	Feb.	12	87	50	$50
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	...	Yes	1	Jan.	12	843	62	$50
University of California Hospital	San Francisco	State	287	..	..	..	...	Yes	1	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	...	Yes	4	Jan. & July	12	184	46	$100
Gallinger Municipal Hospital	Washington, D. C.	City	825	99	..	1	...	No	1	Jan.	12	644	53	$30-50
Children's Memorial Hospital	Chicago	Indep	264	68	31	1	...	Yes	1	Varies	12	120	66	$64.13
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	4	Jan. & July	12	1,192	18	None
Michael Reese Hospital	Chicago	Indep	629	62	20	18	...	Yes	1	Jan. & July	12	214	49	Up to $95
Presbyterian Hospital [1]	Chicago	Chrch	462	26	46	28	...	Yes	1	Varies	12-24	127	47	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	...	Yes	1	Varies	12	152	76	$50
St. Luke's Hospital [1]	Chicago	Chrch	714	7	18	75	...	Yes	1	Jan.	12	96	37	Varies
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	1	July	24	149	76	$112.50-220
Evanston Hospital	Evanston, Ill.	Indep	271	7	53	40	...	Yes	1	March	12	68	66	.....
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	...	Yes	1	March	12	314	38	$20.83
Indiana University Hospitals	Indianapolis	State	480	82	4	14	...	Yes	1	Jan.	12	157	49	$83.33
Methodist Episcopal Hospital	Indianapolis	Chrch	426	..	..	..	...	Yes	1	July	12	123	31	$125

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients — Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
PATHOLOGY—(Continued)														
University Hospitals	Iowa City	State	1,008	89	6	5	...	Yes	2	Jan.	12	301	57	Up to $70.83
Bell Memorial Hospital	Kansas City, Kan.	State	250	15	74	11	...	Yes	1	Dec.	12	173	83	$40-90
Louisville City Hospital	Louisville, Ky.	City	444	100	..	..	...	Yes	2	Feb.	12	337	36	$23 and up
Touro Infirmary	New Orleans	Indep	366	35	39	26	...	Yes	1	Jan. or Feb.	12	99	38	$25
Baltimore City Hospitals (General)	Baltimore	City	756	100	..	..	...	Yes	1	Dec.	12	280	29	$50
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	1	June	Indef.	438	72	$41.66-83.33
Beth Israel Hospital	Boston	Indep	200	22	7	71	...	Yes	2	Varies	Indef.	96	41	$83.33
Boston City Hospital	Boston	City	1,838	88	..	12	...	Yes	5	Varies	12	744	27	$79.17 and up
Children's and Infants' Hospitals	Boston	Indep	333	3	48	49	...	Yes	1	Varies	12	118	78	$56
Massachusetts General Hospital	Boston	Indep	405	53	34	13	...	Yes	1	Varies	24	289	57	$41.66 and up
New England Deaconess Hospital	Boston	Chrch	266	10	59	31	...	No	1	Feb.	12	128	59	$50
Peter Bent Brigham Hospital	Boston	Indep	247	37	27	36	...	Yes	1	Varies	Indef.	170	64	$41.66 and up
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	...	Yes	1	March	24	348	50	$25
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33-125
Harper Hospital	Detroit	Indep	750	13	48	39	...	Yes	1	Feb.	Indef.	82	20	$72
Ancker Hospital	St. Paul	CyCo	1,050	98	1	1	...	Yes	1	March	12	492	64	$40
Barnes Hospital	St. Louis	Chrch	270	29	6	65	...	Yes	1	Dec.	12	179	66	$75
St. Louis City Hospital	St. Louis	City	885	100	..	..	...	Yes	1	March	12	382	25	$125
Newark Beth Israel Hospital	Newark, N. J.	Indep	414	26	24	50	...	Yes	1	Varies	24	173	49	.....
Albany Hospital	Albany, N. Y.	Indep	537	6	80	14	...	Yes	1	Feb.	12	278	68	$50
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	...	Yes	3	June	24	352	34	$50
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	...	Yes	1	Dec.	12	171	38	$25-50
Lincoln Hospital	New York City	City	213	100	..	..	...	Yes	1	May	12	207	37	None
Metropolitan Hospital	New York City	City	1,620	100	..	..	...	Yes	1	Jan. & July	12-24	295	24	$75-117.91
Montefiore Hosp. for Chronic Diseases	New York City	Indep	706	84	5	11	...	Yes	1	July	12	345	63	$50
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	2	Varies	12	435	53	$45-120
New York Hospital	New York City	Indep	823	18	58	24	...	Yes	3	Feb.	12 [6]	183	58	$8.32-25
Presbyterian Hospital	New York City	Indep	641	..	..	..	...	Yes	2	Jan. & July	12	199	43	$41.66 and up
St. Luke's Hospital	New York City	Chrch	540	69	..	31	...	Yes	1	Jan.,May,Sept.	12	169	46	$83.33
Willard Parker Hospital	New York City	City	424	99	1	..	...	No	1	Varies	6	106	46	$100-135.83
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	4	Feb.	12-36	352	63	$41.66 and up
Grasslands Hospital	Valhalla, N. Y.	Co	905	89	2	9	...	Yes	1	Jan. & July	Indef.	296	67	$80-200
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	...	Yes	3	Dec.	12	160	59	$18.75-75
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	...	Yes	4	May	12-24	675	45	None
City Hospital	Cleveland	City	1,585	..	..	..	...	Yes	3	Jan.	12	621	44	$46.50
Mount Sinai Hospital	Cleveland	Indep	270	30	57	13	...	Yes	1	Dec.	12	66	33	$50-85
University Hospitals	Cleveland	Indep	539	47	8	45	...	Yes	2	Jan.	12 [5]	335	65	$20-75
Miami Valley Hospital	Dayton, O.	Indep	383	54	20	26	...	Yes	1	Jan.	12	286	66	$100
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	333	95	4	1	...	Yes	1	Feb.	12	182	42	$40
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	..	Yes	1	Jan.	12	82	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	...	Yes	1	March	24	197	54	None
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	...	Yes	2	July	12	1,625	47	$100-150
Presbyterian Hospital	Philadelphia	Chrch	426	46	10	44	...	Yes	1	Varies	12	97	35	$125
Allegheny General Hospital	Pittsburgh	Indep	405	57	1	42	...	Yes	2	Feb.	12	91	25	$81
Children's Hospital	Pittsburgh	Indep	196	60	11	29	...	Yes	1	July	12	40	29	$47
Mercy Hospital	Pittsburgh	Chrch	670	40	25	35	...	Yes	4	Jan.	12-48	103	30	None [11]
St. Francis Hospital	Pittsburgh	Chrch	487	22	8	70	...	Yes	1	Nov.	12	105	36	$50-100
Reading Hospital	Reading, Pa.	Indep	268	55	2	43	...	Yes	1	Jan.	12	155	70	$90-250
Rhode Island Hospital	Providence	Indep	600	..	..	..	...	Yes	1	Varies	Indef.	276	41	$50
Memphis General Hospital	Memphis, Tenn.	City	400	95	5	..	...	Yes	2	July	12	222	16	$81
Vanderbilt University Hospital	Nashville, Tenn.	Indep	210	31	36	33	...	Yes	2	July	12	144	63	$41.66
PEDIATRICS														
Children's Hospital	Birmingham, Ala.	Indep	50	85	10	5	865	Yes	1	April	12	8	16	$50
Children's Hospital	Los Angeles	Indep	230	61	29	10	...	Yes	8	March or April	12	154	92	$40-140
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	1,047	Yes	2	Jan. & July	24	1,942	53	$10-75
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	245	Yes	1	July	12	38	30	$65-146.25
Children's Hospital of the East Bay	Oakland	Indep	65	6	61	33	2,055	Yes	2	July	12	22	60	$75
Hospital for Children	San Francisco	Indep	259	13	22	65	330	Yes	2	Jan.	12	33	41	$25
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	936	Yes	2	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	436	Yes	2	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	470	Yes	2	Feb.	12	131	69	$25-75
Children's Hospital	Denver	Indep	165	38	24	38	2,576	No	4	Jan.	12	63	59	$75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	508	Yes	3	Jan. & July	12	184	46	$100
Children's Hospital	Washington, D. C.	Indep	182	7	84	9	...	Yes	9	Jan., July, Oct.	12-24	131	51	$10-100 [18]
Gallinger Municipal Hospital	Washington, D. C.	City	825	99	..	1	1,913	No	2	Jan.	12	644	53	$30-50
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga.	City	266	100	..	..	404	Yes	1	Jan. or Feb.	24	161	22	Varies
Henrietta Egleston Hosp. for Children	Atlanta, Ga.	Indep	52	64	10	26	884	No	2	Jan. & July	12	18	35	$27
University Hospital	Augusta, Ga.	City	267	70	30 [7]	..	341	Yes	1	Nov. or Dec.	12	143	27	$50-125
Children's Memorial Hospital	Chicago	Indep	264	68	31	1	3,980	Yes	15	Varies	12-24	120	66	$64.13
Cook County Hospital	Chicago	Co	3,300	100	..	..	...	No	7	Jan. & July	12	1,192	18	None
Michael Reese Hospital	Chicago	Indep	629	62	20	18	2,750	Yes	1	Jan. & July	12	214	49	Up to $95
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	1,941	Yes	1	Varies	12	127	47	$50
Provident Hospital (col.)	Chicago	Indep	150	7	50	43	528	Yes	1	July	12	50	40	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	201	Yes	1	Varies	12	152	76	$50
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	3	July	12	149	76	$112.50-220
Indiana University Hospitals	Indianapolis	State	480	82	4	14	1,008	Yes	2	Jan.	12	157	49	$33.33
University Hospitals	Iowa City	State	1,008	89	6	5	948	Yes	3	Jan.	12	301	57	Up to $70.83
Bell Memorial Hospital	Kansas City, Kan.	State	250	15	74	11	345	Yes	1	Dec.	24	173	83	$40-90
Louisville City Hospital	Louisville, Ky.	City	444	100	..	..	811	Yes	3	Feb.	12	337	36	$23 and up
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	1	May or June	24	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	245	Yes	1	Jan. or Feb.	12	99	38	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	3	June	Indef.	438	72	$41.66-83.33
Union Memorial Hospital	Baltimore	Indep	332	22	53	55	1,119	Yes	2	Jan.	12-36	89	39	$30-40
Boston City Hospital	Boston	City	1,838	88	..	12	5,002	Yes	1	Varies	12	774	27	$79.17 and up
Boston Floating Hospital	Boston	Indep	50	100	..	..	1,370	Yes	3	Varies	12	26	72	None to $50
Children's and Infants' Hospitals	Boston	Indep	333	3	48	49	6,689	Yes	4	Varies	12	118	78	$56
Long Island Hospital [19]	Boston	City	550	100	..	..	...	Yes	1	July	12	71	47	$112.50 and up
Massachusetts General Hospital	Boston	Indep	405	53	34	13	377	Yes	1	Varies	24	289	57	$41.66 and up
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	5,825	Yes	7	March	12	348	50	$25
Children's Hospital	Detroit	Indep	239	..	..	..	6,275	Yes	2	Dec.	..	226	47	$22.50
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	..	1,942	Yes	2	Jan. & July	12-36	508	47	$25-50
St. Louis Children's Hospital	St. Louis	Indep	208	78	1	21	3,598	Yes	3	Dec.	12-36	89	64	$25-41.66
St. Louis City Hospital	St. Louis	City	885	100	..	..	1,088	Yes	1	March	12	382	25	$125
St. Mary's Group of Hospitals	St. Louis	Chrch	457	39	19	42	998	Yes	1	Varies	36	155	47	$30-55

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients (Percentage)			Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
				Free	Part Pay	Full Pay								
PEDIATRICS—(Continued)														
Jersey City Hospital	Jersey City	City	1,200	90	5	5	948	Yes	1	April & Nov.	12	197	22	$100 and up
Cumberland Hospital	Brooklyn	City	321	100	..	..	950	Yes	1	July	12	240	40	$130
Jewish Hospital	Brooklyn	Indep	674	38	11	51	625	Yes	1	Dec.	24	225	43	None
Kings County Hospital	Brooklyn	City	1,660	..	..	..	1,482	Yes	2	Jan. & July	12	727	19	[8]
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	521	Yes	3	Feb.	12	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	354	Yes	2	June	24	352	34	$50
Children's Hospital	Buffalo	Indep	250	58	4	38	1,141	Yes	3	Jan.	12-24	143	59	$50-100
Babies Hospital	New York City	Indep	154	..	..	..	2,325	Yes	2	Varies	12	82	53	$50-100
Bellevue Hospital	New York City	City	2,084	100	..	..	2,457	Yes	7	Jan. & July	12	903	23	$83.33
Fifth Avenue Hospital	New York City	Indep	300	25	20	55	1,252	Yes	1	Jan.	12	23	15	$50
Harlem Hospital	New York City	City	377	..	..	..	...	No	1	July	12	438	33	None
Metropolitan Hospital	New York City	City	1,620	100	..	..	1,467	Yes	1	Jan. & July	12-36	295	24	$75-117.90
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	2	Varies	12	435	53	$45-120
New York Foundling Hospital [31]	New York City	Chrch	390	1	94	5	2,611	Yes	9	May	12	41	65	$25-125
New York Hospital	New York City	Indep	823	18	58	24	786	Yes	6	Feb.	12 [9]	183	58	$8.32-25
New York Nursery and Child's Hosp.	New York City	Indep	256	28	25	47	834	Yes	2	Varies	12	36	40	$50-75
N. Y. Post-Grad. Med. School and Hosp.	New York City	Indep	415	12	4	84	...	Yes	1	March	24	115	36	$0.25
St. Luke's Hospital	New York City	Chrch	540	69	..	31	...	Yes	2	Quarterly	12	169	46	$83.34
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	5	Feb.	12-36	352	63	$41.66 and up
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	4	Jan. & July	12	323	53	$100-117.90
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	684	Yes	1	Jan. & July	12-24	296	67	$80-200
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	295	Yes	12	Dec.	12	160	59	$18.75-75
Children's Hospital	Akron, O.	Indep	110	57	..	43	2,172	Yes	1	Jan.	12	58	54	$100
Children's Hospital	Cincinnati	Chrch	226	56	18	26	2,468	Yes	8	Feb.	12	21	24	$25 and up
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	1,071	Yes	7	May	12-24	675	45	None
Charity Hospital	Cleveland	Chrch	301	51	..	49	...	Yes	1	Jan.	12	121	38	$50
City Hospital	Cleveland	City	1,585	..	..	..	555	Yes	3	Jan.	12	621	44	$46.50
University Hospitals	Cleveland	Indep	539	47	8	45	887	Yes	11	Varies	12 [5]	335	65	$20-75
Children's Hospital	Columbus, O.	Indep	100	68	31	1	...	Yes	2	Jan.	12	56	64	$75
State University Hospitals	Oklahoma City	State	467	57	34	9	555	Yes	1	Dec.	12	186	42	$25-50
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	408	95	4	1	553	Yes	2	Feb.	24	182	42	$30-45
Children's Hospital	Philadelphia	Indep	130	78	17	5	...	Yes	11	Varies	12-24	74	62	$25-58.33 [20]
Children's Hospital of the Mary J. Drexel Home	Philadelphia	Chrch	52	31	27	42	900	Yes	1	April	12	7	26	$100
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	877	Yes	1	March	12	197	54	None
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	2,042	Yes	1	July	12	1,625	47	$100-150
St. Christopher's Hosp. for Children	Philadelphia	Indep	75	59	14	27	2,149	Yes	2	March	12	31	60	$75
Children's Hospital	Pittsburgh	Indep	196	60	11	29	2,002	Yes	5	July	12	40	29	$47
Children's Hospital	Chattanooga, Tenn.	CyCo	74	79	3	18	941	Yes	2	Jan.	12	34	39	$50-100
Vanderbilt University Hospital	Nashville, Tenn.	Indep	210	31	36	33	790	Yes	3	July	12	144	63	$41.66
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	848	Yes	1	Feb.	12	117	21	$50
University of Virginia Hospital	University	State	315	22	46	32	578	Yes	1	Dec.	12	116	43	$25-75
Children's Orthopedic Hospital	Seattle	Indep	139	61	26	13	266	Yes	1	June	12	29	71	$87.88
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	1	Jan.	12	281	72	$43.66 and up
Milwaukee Children's Hospital	Milwaukee	Indep	155	..	..	..	2,874	Yes	5	Jan.	12-24	28	24	$60
PSYCHIATRY														
Agnews State Hospital	Agnew, Calif.	State	3,015	81	19	..	...	No	2	Varies	Indef.	32	15	$170 and up
Livermore Sanitarium	Livermore, Calif.	Indep	114	81	19	..	165	No	1	.....	Indef.	[16]	..	.....
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	438	Yes	2	Jan.	12	71	48	$67.50
Mendocino State Hospital	Talmage, Calif.	State	2,660	90	..	10	2,958	No	2	July	12	21	18	$50
Colorado Psychopathic Hospital	Denver	State	78	73	23	4	...	Yes	6	Feb. or March	24	25	64	$135
Neuro-Psychiatric Institute and Hospital of the Hartford Retreat [1]	Hartford, Conn.	Indep	200	..	..	..	539	No	2	Varies	12	[16]	..	.....
Connecticut State Hospital	Middletown	State	3,150	..	..	..	...	Yes	3	Varies	Indef.	...	20	$175 and up
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	210	Yes	5	Jan. & July	12	184	46	$100
Delaware State Hospital	Farnhurst	State	933	..	..	..	...	Yes	3	Jan.	Indef.	42	51	$50
Gallinger Municipal Hospital	Washington, D. C.	City	825	99	..	1	...	No	1	Jan.	Indef.	644	53	$30-50
St. Elizabeths Hospital	Washington, D. C.	Fed	4,500	..	..	..	...	Yes	5	July & Oct.	12	200	72	$136.66
Chicago State Hospital	Chicago	State	4,242	100	..	..	...	Yes	2	Varies	Indef.	5	1	$150 and up
Cook County Psychopathic Hospital	Chicago	Co	275	100	..	..	...	No	1	Varies	Indef.	...	..	$150-225
Research and Educational Hospital	Chicago	State	382	100	..	..	234	Yes	2	Varies	12	152	76	$50
East Moline State Hospital	East Moline, Ill.	State	1,949	100	..	..	...	Yes	1	Varies	Indef.	30	16	$150
Kankakee State Hospital	Kankakee, Ill.	State	4,000	100	..	..	...	Yes	1	Varies	Indef.	112	34	.....
Central State Hospital	Indianapolis	State	1,729	..	..	..	1,848	No	3	Varies	Indef.	18	18	$100
Logansport State Hospital	Logansport, Ind.	State	1,682	96	3	1	1,636	No	2	Varies	Indef.	11	11	$125-25-171
Iowa State Psychopathic Hospital	Iowa City	State	60	90	1	9	323	Yes	4	May	12-24	1	33	$141.66
Osawatomie State Hospital	Osawatomie, Kan.	State	1,601	91	..	9	...	Yes	1	July	Indef.	21	22	$100
Menninger Sanitarium	Topeka, Kan.	Indep	45	..	..	100	108	Yes	1	Sept.	12	[16]	..	.....
East Louisiana State Hospital	Jackson	State	3,520	98	..	2	3,983	No	1	Varies	Indef.	8	4	$200
Baltimore City Hosps. (Psychopathic)	Baltimore	City	320	100	..	..	...	No	1	Dec.	Indef.	14	48	$100
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	4	June	Indef.	438	72	$41.66-83.33
Springfield State Hospital	Sykesville, Md.	State	2,600	99	..	1	...	No	1	July	Indef.	29	17	$25
Sheppard and Enoch Pratt Hospital	Towson, Md.	Indep	290	6	65	29	373	No	4	Varies	24	0	0	None
McLean Hospital	Belmont, Mass.	Indep	232	..	..	..	341	No	4	.....	Indef.	[16]	..	$50-125
Boston Psychopathic Hospital	Boston	State	110	75	25	..	...	No	10	April	12-24	21	75	$75
Boston State Hospital	Boston	State	2,200	..	..	..	3,059	No	3	Varies	Indef.	115	42	.....
Massachusetts General Hospital	Boston	Indep	405	53	34	13	333	Yes	1	Varies	Indef.	289	57	$41.66 and up
Gardner State Colony	Gardner, Mass.	State	1,359	97	2	1	1,605	....	1	Varies	Indef.	15	25	.....
Medfield State Hospital	Medfield, Mass.	State	1,800	..	..	..	...	Yes	1	July	12	34	31	$135
Grafton State Hospital	North Grafton, Mass.	State	1,493	100	..	..	...	No	2	March	Indef.	0	0	.....
Taunton State Hospital	Taunton, Mass.	State	1,547	93	4	3	2,031	No	4	June	Indef.	80	40	$135
State Psychopathic Hospital of the University of Michigan	Ann Arbor, Mich.	State	62	100	..	..	261	Yes	1	May	12	[16]	..	$135
Battle Creek Sanitarium	Battle Creek, Mich.	Indep	1,013	5	35	60	...	No	1	Jan.	12	7	26	$125-150
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33-125
Kalamazoo State Hospital	Kalamazoo, Mich.	State	2,750	..	..	..	...	No	2	July	12	15	6	$50
Pontiac State Hospital	Pontiac, Mich.	State	1,765	..	..	..	1,763	No	1	.....	..	26	33	.....
Traverse City State Hospital	Traverse City, Mich.	State	2,300	..	..	..	...	No	1	.....	..	24	15	.....
Ypsilanti State Hospital	Ypsilanti, Mich.	State	1,485	85	2	13	1,447	No	1	Varies	Indef.	36	36	$125
Missouri State Hospital No. 4	Farmington	State	1,196	..	..	..	...	No	2	Varies	Indef.	21	21	$125-150
State Hospital No. 1	Fulton, Mo.	State	1,957	..	..	..	...	No	6	Varies	Indef.	27	18	$116.65-208
State Hospital No. 2	St. Joseph, Mo.	State	2,450	98	..	2	...	No	1	Varies	Indef.	29	14	$112.50-150
City Sanitarium	St. Louis	City	2,265	..	..	..	...	....	2	July	Indef.	26	10	$150
St. Louis City Hospital	St. Louis	City	885	100	..	..	1,749	Yes	1	March	12	382	25	$125

Numerical references will be found on page 608.

				Classification of Patients — Percentage									
		Control	Capacity	Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
PSYCHIATRY—(Continued)														
Norfolk State Hospital	Norfolk, Neb.	State	1,044	89	11	..	...	No	2	Varies	Indef.	19	35	$90-125
Albany Hospital	Albany, N. Y.	Indep	537	6	80	14	753	Yes	1	Feb.	12	278	68	$50
Binghamton State Hospital	Binghamton, N. Y.	State	2,946	89	11	..	2,860	No	6	Varies	Indef.	86	47	$150
Brooklyn State Hospital	Brooklyn	State	1,300	83	17	..	...	No	4	Varies	Indef.	160	29	$166.66 and up
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	1,555	Yes	5	June	Indef.	352	34	$50
Buffalo State Hospital	Buffalo	State	2,519	93	7	..	3,280	No	8	Varies	Indef.	40	24	$166 and up
Hastings Hillside Hospital	Hastings-upon-Hudson, N. Y.	Indep	40	..	..	..	169	No	1	July	12	[16]	..	$100
Gowanda State Homeopathic Hospital	Helmuth, N. Y.	State	1,303	..	..	..	1,266	No	1	Varies	Indef.	49	60	$150
Kings Park State Hospital	Kings Park, N. Y.	State	4,000	85	15	..	...	....	9	Varies	Indef.	83	30	$150
Middletown State Homeopathic Hosp.	Middletown, N. Y.	State	3,154	87	13	..	3,036	No	2	Varies	Indef.	65	45	$166.66-200
Manhattan State Hospital	New York City	State	4,319	..	..	..	4,447	No	1	Varies	Indef.	29	5	$166 and up
New York Hospital	New York City	Indep	823	18	58	24	...	Yes	6	Feb.	12 [6]	183	58	$8.32-25
New York State Psychiatric Institute and Hospital	New York City	State	200	..	..	..	...	Yes	7	Varies	12-24	[16]	..	$25
St. Lawrence State Hospital	Ogdensburg, N. Y.	State	2,339	90	5	5	2,703	No	6	Varies	Indef.	70	41	$166 and up
Hudson River State Hospital	Poughkeepsie, N. Y.	State	4,684	90	10	..	5,421	No	5	Varies	Indef.	111	28	$166.66 and up
Rochester State Hospital	Rochester, N. Y.	State	2,666	87	13	..	...	No	3	Varies	Indef.	49	26	$150
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	..	...	Yes	1	Feb.	12-36	352	63	$41.66 and up
Utica State Hospital	Utica, N. Y.	State	1,608	100	..	..	2,447	No	2	Varies	Indef.	40	23	$166.66 and up
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	1,175	Yes	1	Varies	Indef.	296	67	$80-200
Bloomingdale Hospital	White Plains, N. Y.	Indep	322	5	54	41	492	No	7	Varies	Indef.	[16]	..	$100 and up
North Dakota State Hosp. for Insane	Jamestown, N. D.	State	2,000	..	..	..	1,705	No	1	Varies	Indef.	36	18	$166 and up
Cincinnati General Hospital	Cincinnati	City	925	95	..	5	1,370	Yes	2	May	24	675	45	None
Cincinnati Sanitarium	Cincinnati	Indep	75	..	..	..	173	No	1	Varies	Indef.	[16]	..	$125
City Hospital	Cleveland	City	1,585	..	..	..	653	Yes	3	Jan.	12	621	44	$46.50
Cleveland State Hospital	Cleveland	State	2,500	..	..	..	...	No	4	Varies	Indef.	18	20	Up to $100
Columbus State Hospital	Columbus, O.	State	2,800	100	..	..	3,859	No	2	Varies	Indef.	45	20	$131.66
Dayton State Hospital	Dayton, O.	State	1,556	..	..	..	...	Yes	1	Varies	Indef.	9	6	$141.66
Allentown State Hospital	Allentown, Pa.	State	1,506	79	6	15	2,305	No	1	Varies	Indef.	18	19	$150 and up
Danville State Hospital	Danville, Pa.	State	1,946	95	..	5	2,603	Yes	1	June	Indef.	30	19	$100
Norristown State Hospital	Norristown, Pa.	State	3,520	..	..	..	3,204	No	1	June	Indef.	60	21	$136.66 and up
Friends Hospital	Philadelphia	Indep	190	..	..	..	143	No	1	Varies	Indef.	[16]	..	.....
Pennsylvania Hospital, Department for Mental and Nervous Diseases	Philadelphia	Indep	225	5	61	34	220	Yes	2	Varies	Indef.	[16]	..	Varies
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	4,377	Yes	2	July	12	1,625	47	$100-150
St. Francis Hospital	Pittsburgh	Chrch	487	22	8	70	1,440	Yes	1	Nov.	12	105	36	$50-150
Warren State Hospital	Warren, Pa.	State	1,956	..	..	..	...	Yes	3	July	Indef.	45	30	$100
State Hospital for Mental Diseases	Howard, R. I.	State	2,275	93	..	7	2,027	No	4	Varies	Indef.	69	41	$160
Butler Hospital [21]	Providence, R. I.	Indep	174	8	73	19	...	Yes	2	Jan.	12	[16]	..	$75
Charles V. Chapin Hospital	Providence, R. I.	City	265	66	10	24	607	Yes	1	Varies	12	91	51	$75
Western State Hospital	Bolivar, Tenn.	State	1,775	94	..	6	1,750	No	2	Varies	Indef.	6	3	$100
San Antonio State Hospital	San Antonio, Tex.	State	2,320	..	..	..	...	....	4	June	Indef.	..	..	$125
Wichita Falls State Hospital	Wichita Falls, Tex.	State	2,625	99	..	1	2,000	No	3	Sept.	Indef.	8	4	$125
University of Virginia Hospital	University	State	315	22	46	32	219	Yes	1	Dec.	12	116	43	$25-75
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	1	Jan.	30	281	72	$43.66 and up
Milwaukee Sanitarium	Wauwatosa, Wis.	Indep	130	..	..	100	...	No	1	Sept.	36	[16]	..	$150
RADIOLOGY														
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	...	Yes	2	Jan. & July	12	1,942	53	$10-75
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	...	Yes	2	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	...	Yes	1	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	...	Yes	2	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	...	Yes	3	Jan. & July	12	184	46	$100
Garfield Memorial Hospital	Washington, D. C.	Indep	321	58 [9]	..	42	...	Yes	1	Dec.	12	68	39	$60-135
Michael Reese Hospital	Chicago	Indep	629	62	20	18	...	Yes	1	Jan. & July	12	214	49	Up to $95
St. Luke's Hospital	Chicago	Chrch	714	7	18	75	...	Yes	2	Jan.	24	96	37	$50
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	2	July	12	149	76	$112.50-220
University Hospitals	Iowa City	State	1,008	89	6	5	...	Yes	3	Jan.	24	301	57	Up to $70.83
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	2	May or June	24	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	...	Yes	1	Jan. or Feb.	12	99	38	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	1	June	Indef.	438	72	$41.66-83.33
University Hospital	Baltimore	State	275	56	25	19	...	Yes	1	Jan.	12	127	39	$25
Boston City Hospital	Boston	City	1,838	88	..	12	...	Yes	1	Varies	Indef.	774	27	$79.17 and up
Massachusetts General Hospital	Boston	Indep	405	53	34	13	...	Yes	2	Varies	Indef.	289	57	$41.66 and up
Peter Bent Brigham Hospital	Boston	Indep	247	37	27	36	...	Yes	1	Varies	12	170	64	$41.66 and up
University Hospital	Ann Arbor, Mich.	State	1,287	..	..	..	...	Yes	3	March	12-18	348	50	$25
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33-125
Hurley Hospital	Flint, Mich.	City	425	..	..	..	...	No	1	Feb.	12	183	35	$50
St. Louis City Hospital	St. Louis	City	885	100	..	..	...	Yes	1	March	12	382	25	$125
University of Nebraska Hospital	Omaha	State	220	100	..	..	...	Yes	1	Nov.	24	118	74	$50
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	...	Yes	1	Feb.	12	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	...	Yes	2	June	24	352	34	$50
Bellevue Hospital	New York City	City	2,084	100	..	..	...	Yes	4	Jan. & July	12-24	903	23	$83.33
Lenox Hill Hospital	New York City	Indep	477	18	..	82	...	Yes	1	Varies	24	124	39	$90-128
Metropolitan Hospital	New York City	City	1,620	100	..	..	...	Yes	1	Jan. & July	12	295	24	$75-117.90
Montefiore Hosp. for Chronic Dis. [22]	New York City	Indep	706	84	5	11	...	Yes	2	Jan. & July	12	345	63	$50
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	3	Varies	12-24	435	53	$45-120
New York Hospital	New York City	Indep	823	18	58	24	...	Yes	1	Feb.	12 [6]	183	58	$8.32-25
Presbyterian Hospital	New York City	Indep	641	..	..	..	...	Yes	2	Jan. & July	12-21	199	43	$41.66 and up
St. Luke's Hospital	New York City	Chrch	540	69	..	31	...	Yes	1	Quarterly	12	169	46	$83.34
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	2	Feb.	12-36	352	63	$41.66 and up
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	1	Jan. & July	12	323	53	$100-117.90
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	...	Yes	1	Dec.	12	160	59	$18.75-75
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	...	Yes	1	May	12	675	45	None
University Hospitals	Cleveland	Indep	539	47	8	45	...	Yes	1	Jan.	12 [5]	335	65	$20-75
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	333	95	4	1	...	Yes	1	Feb.	12	182	42	$40
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	...	Yes	1	March	12	197	54	None
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	...	Yes	1	July	12	1,625	47	$100-150
St. Francis Hospital	Pittsburgh	Chrch	487	22	8	70	...	Yes	1	Nov.	12	105	36	$50-150
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	...	Yes	1	Feb.	12	117	21	$50
University of Virginia Hospital	University	State	315	22	46	32	...	Yes	1	Dec.	12	116	43	$25-75
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	1	Jan.	24	281	72	$43.66 and up
SURGERY														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	1,822	Yes	2	Jan.	Indef.	266	31	$36-45
Fresno County General Hospital	Fresno, Calif.	Co	523	98	2	..	607	Yes	2	Jan.	12	...	34	$75-135
Cedars of Lebanon Hospital	Los Angeles	Indep	280	21	6	73	1,554	Yes	1	Dec.	12	80	35	$100
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	3,041	Yes	6	Jan. & July	36	1,942	53	$10-75
White Memorial Hospital	Los Angeles	Chrch	134	1	69	30	1,449	Yes	1	July	24	38	30	$65-146.25

Numerical references will be found on page 608.

				Classification of Patients (Percentage)										
		Control	Capacity	Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
SURGERY—(Continued)														
San Bernardino County Charity Hosp.	San Bernardino, Calif...	Co	302	100	..	..	586	Yes	1	Jan. or Feb.	12	149	50	$75
Hospital for Children	San Francisco	Indep	259	13	22	65	832	Yes	1	Jan.	12	33	41	$25
Mount Zion Hospital	San Francisco	Indep	198	22	15	63	1,559	Yes	1	Feb.	12	87	50	$50
San Francisco Hospital	San Francisco	CyCo	1,408	100	..	..	2,864	Yes	4	Jan.	12	843	62	$50
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	866	Yes	3	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	765	Yes	5	Feb.	12	131	69	$25-75
Santa Clara County Hospital	San Jose, Calif	Co	499	100	..	..	3,570	Yes	1	Dec.	12	228	56	$125
Colorado General Hospital	Denver	State	178	67	33	..	487	Yes	1	Dec.	12	162	82	$75
New Haven Hospital	New Haven, Conn	Indep	504	12	76	12	2,168	Yes	10	Jan. & July	12-18	184	46	$100
Gallinger Municipal Hospital	Washington, D. C	City	825	99	..	1	1,776	No	3	Jan.	12	644	53	$30-50
Garfield Memorial Hospital	Washington, D. C	Indep	321	58 [9]	..	42	...	Yes	1	Dec.	12	68	39	$135
James M. Jackson Memorial Hospital	Miami, Fla	City	350	67	..	33	3,514	Yes	1	July	12	94	19	$100
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga	City	266	100	..	..	2,623	Yes	2	Jan. or Feb.	12	161	22	Varies
University Hospital	Augusta, Ga	City	267	70	30 [7]	..	2,229	Yes	3	Nov. or Dec.	12	143	27	$50-125
Augustana Hospital	Chicago	Chrch	375	22	12	66	...	Yes	1	Oct.	12	35	21	None
Passavant Memorial Hospital	Chicago	Indep	250	5	1	94	984	Yes	2	Jan. & July	12	44	60	None
Presbyterian Hospital	Chicago	Chrch	462	26	46	28	4,674	Yes	2	Varies	12	127	47	$50
Provident Hospital (col.)	Chicago	Indep	150	7	50	43	820	Yes	1	July	12	50	40	$50
Research and Educational Hospital	Chicago	State	382	100	..	..	1,022	Yes	3	Varies	12	152	76	$50
St. Luke's Hospital [25]	Chicago	Chrch	714	7	18	75	3,436	Yes	6	Jan.	12	96	37	None
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	4	July	12-36	149	76	$112.50-220
Indianapolis City Hospital	Indianapolis	City	566	..	..	..	1,628	Yes	3	March	12	314	38	$20.83
Indiana University Hospitals	Indianapolis	State	480	82	4	14	1,333	Yes	4	Jan.	12	157	49	$33.33
University Hospitals	Iowa City	State	1,008	89	6	5	2,029	Yes	7	Jan.	12-36	301	57	Up to $70.83
Bell Memorial Hospital	Kansas City, Kan	State	250	15	74	11	957	Yes	2	Dec.	12	173	83	$40-90
Louisville City Hospital	Louisville, Ky	City	444	100	..	..	1,699	Yes	11	Feb.	12	337	36	$23 and up
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	3	May or June	48	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	2,197	Yes	1	Jan. or Feb.	24	99	38	$25
Baltimore City Hospitals (General)	Baltimore	City	756	100	..	..	...	Yes	3	Dec.	12	280	29	$50
Bon Secours Hospital	Baltimore	Chrch	145	35	21	44	1,226	Yes	2	Dec. or Jan.	12	15	19	$125
Church Home and Infirmary	Baltimore	Chrch	184	15	66	19	1,578	Yes	3	Jan.	12	48	46	$41.66
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	7	June	Indef.	438	72	$41.66-83.33
Maryland General Hospital	Baltimore	Chrch	228	45	6	49	2,106	Yes	3	Dec.	12-36	37	16	$35
Mercy Hospital	Baltimore	Chrch	264	46	14	40	1,571	Yes	5	Jan.	12 [3]	46	21	$10-50
Provident Hosp. and Free Disp. (col.)	Baltimore	Indep	129	88	3	9	...	Yes	2	Oct.	60	33	18	$25
St. Agnes Hospital	Baltimore	Chrch	212	39	36	25	1,871	Yes	3	Dec.	36	39	25	.....
St. Joseph's Hospital	Baltimore	Chrch	290	48	10	42	2,433	Yes	5	Jan.	12	57	30	None
Sinai Hospital	Baltimore	Indep	269	51	10	39	2,233	Yes	1	Jan.	12	71	29	$50
South Baltimore General Hospital	Baltimore	Indep	115	34	40	26	1,551	Yes	2	Dec.	12	20	16	$50
Union Memorial Hospital	Baltimore	Indep	332	22	53	25	2,613	Yes	2	Jan.	24-48	89	39	$30-40
University Hospital	Baltimore	State	275	56	25	19	...	Yes	4	Jan.	12	127	39	$25
West Baltimore General Hospital	Baltimore	Indep	200	39	..	61	1,476	Yes	3	Jan.	12	21	22	$20-50
Beth Israel Hospital	Boston	Indep	200	22	7	71	1,815	Yes	2	Varies	12	96	41	$83.33
Boston City Hospital	Boston	City	1,838	88	..	12	14,333	Yes	6	Varies	12-24	774	27	$79.17 and up
Boston Sanatorium	Boston	City	616	..	..	..	....	....	1	Varies	24	....	..	$79.17 and up
Children's and Infants' Hospitals	Boston	Indep	333	3	48	49	1,256	Yes	2	Varies	12	118	78	$56
Long Island Hospital	Boston	City	550	100	..	..	205	Yes	1	July	Indef.	71	47	$112.50
Massachusetts General Hospital	Boston	Indep	405	53	34	13	5,161	Yes	5	Varies	12	289	57	$41.66 and up
Massachusetts Memorial Hospitals	Boston	Indep	367	22	46	32	...	Yes	1	March	12	98	45	$100
Peter Bent Brigham Hospital	Boston	Indep	247	37	27	36	2,442	Yes	5	Varies	16-24	170	64	$41.66-83.33
Truesdale Hospital	Fall River, Mass	Indep	125	16	44	40	1,204	No	2	Jan. & July	12	48	43	None
Memorial Hospital	Worcester, Mass	Indep	215	17	9	74	1,434	Yes	1	March or April	12	75	54	$90
University Hospital	Ann Arbor, Mich	State	1,287	..	..	..	3,684	Yes	12	March	12	348	50	$25
Battle Creek Sanitarium	Battle Creek, Mich	Indep	1,013	5	35	60	...	No	1	Jan.	12	7	26	$125-150
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	2	April	12	430	41	$83.33-125
Grace Hospital	Detroit	Indep	398	30	48	22	2,401	Yes	1	March	12	127	34	$25
Harper Hospital	Detroit	Indep	750	13	48	39	5,787	Yes	3	Feb.	12-60	82	20	$72
Henry Ford Hospital	Detroit	Indep	610	..	42	58	3,219	No	4	Jan.	12-48	109	43	$110-125
Jefferson Clinic and Diagnostic Hosp.	Detroit	Indep	62	3	6	91	...	Yes	1	Feb.	12	5	13	$50
Providence Hospital	Detroit	Chrch	450	33	55	12	7,486	Yes	1	Jan.	12	95	33	$75
Blodgett Memorial Hospital	Grand Rapids, Mich	Indep	150	31	48	21	1,386	Yes	1	.....	..	39	38	.....
St. Mary's Hospital	Grand Rapids, Mich	Chrch	253	4	42	54	1,670	Yes	1	Jan.	12	73	30	$40
Minneapolis General Hospital [1]	Minneapolis	City	674	98	2	..	2,058	Yes	6	Jan. & July	12-36	508	47	$25-50
Ancker Hospital [1]	St. Paul	CyCo	1,050	98	1	1	1,742	Yes	1	March	Indef.	492	64	$40
St. Louis County Hospital	Clayton, Mo	Co	225	90	1	9	1,976	No	1	Jan.	12	71	20	$100
Barnard Free Skin and Cancer Hosp.	St. Louis	Indep	44	100	..	..	...	Yes	1	Jan.	12	17	44	$25
Barnes Hospital	St. Louis	Chrch	270	29	6	65	4,449	Yes	6	Dec.	24	179	66	$75
Jewish Hospital	St. Louis	Indep	290	39	47	14	2,108	Yes	2	Dec.	12-36	63	38	$80
St. Louis City Hospital	St. Louis	City	885	100	..	..	4,956	Yes	2	March	12	382	25	$125
St. Louis City Hospital No. 2 (col.)	St. Louis	City	335	100	..	..	2,002	No	1	July	12-36	122	16	$125
St. Luke's Hospital	St. Louis	Chrch	210	20	29	51	1,975	Yes	2	Dec.	12-24	33	26	$50
St. Mary's Group of Hospitals	St. Louis	Chrch	457	39	19	42	3,293	Yes	5	Varies	24-36	155	47	$30-55
Jersey City Hospital	Jersey City	City	1,200	90	5	5	3,600	Yes	2	April & Nov.	12-24	197	22	$100 and up
Albany Hospital	Albany, N. Y	Indep	537	6	80	14	2,277	Yes	1	Feb.	12	278	68	$50
Cumberland Hospital	Brooklyn	City	321	100	..	..	2,111	Yes	2	July	12	240	40	$130
Kings County Hospital	Brooklyn	City	1,660	..	..	..	8,677	Yes	3	Jan. & July	12	727	19	s
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	1,891	Yes	3	Feb.	12-24	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	21	47	2	1,709	Yes	3	June	24	352	34	$50
Buffalo General Hospital	Buffalo	Indep	462	14	35	51	2,610	Yes	3	Dec.	12-24	171	38	$25-50
Millard Fillmore Hospital	Buffalo	Indep	309	26	32	42	1,292	Yes	2	Dec.	12-24	119	49	$50
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y	Indep	460	..	..	..	426	No	1	July	12	32	68	$50 and up
Charles S. Wilson Memorial Hospital	Johnson City, N. Y	Indep	219	2	3	95	619	Yes	1	Dec.	12	53	49	$75
Bellevue Hospital	New York City	City	2,084	100	..	..	13,421	Yes	2	Jan. & July	12	903	23	$83.33
Fifth Avenue Hospital	New York City	Indep	300	25	20	55	2,523	Yes	2	Jan.	12	23	15	$50-100
Lenox Hill Hospital	New York City	Indep	477	18	..	82	2,006	Yes	1	Varies	Indef.	124	39	$90-128
Metropolitan Hospital	New York City	City	1,620	100	..	..	2,538	Yes	2	Jan. & July	24	295	24	$75-117.90
Montefiore Hosp. for Chronic Diseases	New York City	Indep	706	84	5	11	...	Yes	2	Jan. & July	12	345	63	$50-100
Mount Sinai Hospital	New York City	Indep	754	90	5	5	...	Yes	4	Varies	12	435	53	$45-120
New York Hospital	New York City	Indep	823	18	58	24	2,868	Yes	14	Feb.	12 [6]	183	58	$8.32-25
N. Y. Polyclinic Med. School and Hosp.	New York City	Indep	345	20	22	58	2,437	Yes	8	Jan.,May, Sept.	24	45	24	None
N. Y. Post-Grad. Med. School and Hosp.	New York City	Indep	415	12	4	84	3,337	Yes	1	March	12	115	36	$90.25

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients — Percentage: Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
SURGERY—(Continued)														
New York Society for the Relief of the Ruptured and Crippled	New York City	Indep	269	22	30	48	1,051	Yes	1	Jan. & July	12	14	34	.....
Presbyterian Hospital [1]	New York City	Indep	641	..	..	..	...	Yes	10	Jan. & July	12-36	199	43	$41.66 and up
Stuyvesant Square Hospital	New York City	Indep	93	27	1	72	791	Yes	2	Jan. & July	12	4	13	$58-75
Rochester General Hospital	Rochester, N. Y.	Indep	365	56	11	33	1,671	Yes	1	April	12	171	64	$50
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	6	Feb.	12-36	352	63	$41.66 and up
Hospital of the Good Shepherd	Syracuse, N. Y.	Indep	242	4	32	64	2,439	No	2	Dec.	12	81	34	$37.50-75
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	685	Yes	2	Jan. & July	12	296	67	$80-200
Duke Hospital	Durham, N. C.	Indep	456	95 [9]	..	5	1,120	Yes	6	Dec.	12	160	59	$18.75-75
Watts Hospital	Durham, N. C.	Indep	200	40	28	32	2,450	Yes	1	Jan. or Feb.	12	39	35	$50-60
City Hospital	Akron, O.	Indep	350	48	12	40	3,641	Yes	3	Feb.	12-36	223	64	$50-100
Cincinnati General Hospital	Cincinnati	City	925	95	5	..	3,438	Yes	13	May	12-60	675	45	None
Deaconess Hospital	Cincinnati	Chrch	175	4	53	43	1,672	No	1	Dec.	12	68	38	$75
Good Samaritan Hospital	Cincinnati	Chrch	535	9	62	29	2,440	Yes	3	Dec.	24-36	62	24	$50-75
Jewish Hospital	Cincinnati	Indep	262	25	37	38	1,851	No	1	Dec.	12	34	23	$75
Charity Hospital	Cleveland	Chrch	301	51	..	49	...	Yes	1	Jan.	24	121	38	$50
City Hospital	Cleveland	City	1,585	..	..	..	3,218	Yes	8	Jan.	18	621	44	$46.50
Mount Sinai Hospital	Cleveland	Indep	270	30	57	13	...	Yes	1	Dec.	12	66	33	$50-85
St. Alexis Hospital	Cleveland	Chrch	220	25	3	72	2,577	Yes	2	Dec.	12	33	15	$50-60
St. John's Hospital	Cleveland	Chrch	207	11	83	6	1,246	No	1	Dec.	12	32	18	$50-100
St. Luke's Hospital	Cleveland	Chrch	394	14	6	80	2,238	Yes	3	Dec.	12-18	83	28	$25-75
University Hospitals	Cleveland	Indep	539	47	8	45	1,792	Yes	6	Jan.	12 [5]	335	65	$20-75
Starling-Loving University Hospital	Columbus, O.	State	276	60	14	26	...	No	4	Dec.	12-24	132	41	$83.33
Miami Valley Hospital	Dayton, O.	Indep	383	54	20	26	4,104	Yes	1	Jan.	12-24	286	66	$100
State University Hospitals	Oklahoma City	State	467	57	34	9	2,174	Yes	3	Dec.	12	186	42	$25-50
Univ. of Ore. Med. School Hospitals [10]	Portland, Ore.	Co	408	95	4	1	1,344	Yes	2	Feb.	24	182	42	$30-45
Geo. F. Geisinger Memorial Hospital	Danville, Pa.	Indep	200	24	10	66	1,507	Yes	1	Jan.	12	78	36	.....
Graduate Hosp. of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	1,194	Yes	2	Jan.	12	82	49	None
Jewish Hospital	Philadelphia	Indep	422	33	9	58	3,270	Yes	1	Jan. or Feb.	12	152	44	None
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	5,282	Yes	1	July	12	1,625	47	$100-150
Allegheny General Hospital	Pittsburgh	Indep	405	57	1	42	3,291	Yes	2	Feb.	24	91	25	$81
St. Francis Hospital	Pittsburgh	Chrch	487	22	8	70	1,498	Yes	1	Nov.	12	105	36	$50-150
Reading Hospital	Reading, Pa.	Indep	268	55	2	43	1,587	Yes	1	Jan.	12	155	70	$90-250
Knoxville General Hospital	Knoxville, Tenn.	City	349	..	..	..	1,661	Yes	1	July	12	35	9	$100
Memphis General Hospital	Memphis, Tenn.	City	400	95	5	..	6,028	Yes	2	July	12	222	16	$81
Nashville General Hospital	Nashville, Tenn.	City	305	91	..	9	2,671	Yes	2	Dec.	12	65	17	$75
Vanderbilt University Hospital	Nashville, Tenn.	Indep	210	31	36	33	1,733	Yes	4	July	12	144	63	$41.66
Baylor University Hospital	Dallas, Tex.	Chrch	379	12	11	77	5,034	Yes	1	April	12	97	36	$100
Parkland Hospital	Dallas, Tex.	CyCo	293	93	7	..	2,213	Yes	1	June	12	113	17	$90
John Sealy Hospital	Galveston, Tex.	City	374	78	..	22	2,332	Yes	1	March	12	132	42	None
Hermann Hospital	Houston, Tex.	Indep	200	92	..	8	2,398	Yes	1	March	12-24	96	51	$75-100
Dr. W. H. Groves Latter-Day Saints Hospital	Salt Lake City	Chrch	466	7	..	93	2,970	Yes	1	May	12	52	24	$35 [24]
Medical College of Va. Hosp. Division	Richmond	Indep	456	10	79	11	3,277	Yes	6	Feb.	12 [6]	117	21	$50
Jefferson Hospital	Roanoke, Va.	Indiv	110	..	..	..	1,038	No	2	Jan.	12-24	18	33	$150
University of Virginia Hospital	University	State	315	22	46	32	1,508	Yes	1	Dec.	12	116	43	$25-75
Charleston General Hospital	Charleston, W. Va.	Indep	165	3	11	86	1,862	Yes	3	Jan.	36	45	34	$75-100
State of Wisconsin General Hospital	Madison	State	652	..	..	..	...	Yes	4	Jan.	12-36	281	72	$43.66 and up
THORACIC SURGERY														
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	State	404	..	..	..	...	Yes	1	Varies	Indef.	20	15	$144
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	3	Jan. & July	12	323	53	$100-117.90
TROPICAL DISEASES														
Boston City Hospital	Boston	City	1,838	88	..	12	...	Yes	1	Varies	48	774	27	$79.17 and up
Presbyterian Hospital	San Juan, P. R.	Chrch	77	..	..	..	...	Yes	1	.....	Indef.	...	..	.....
University Hospital of the School of Tropical Medicine	San Juan, P. R.	Gov't	54	88	7	5	...	Yes	1	April	Indef.	25	64	$175-200
TUBERCULOSIS														
Arroyo Sanatorium	Livermore, Calif.	Co	185	100	..	..	203	No	2	Jan.	Indef.	[16]	..	$125
Barlow Sanatorium	Los Angeles	Indep	100	4	96	..	...	Yes	2	Varies	12	[16]	..	$100
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	954	Yes	1	Jan. & July	12	1,942	53	$10-75
Pottenger Sanatorium and Clinic	Monrovia, Calif.	Indep	120	..	..	..	...	Yes	1	Varies	Indef.	[16]	..	$75 and up
Santa Clara County Hospital	San Jose, Calif.	Co	499	100	..	..	175	Yes	2	Dec.	12	228	56	$125
Fairmont Hospital of Alameda County	San Leandro, Calif.	Co	898	100	..	..	...	....	1	April	12	261	61	$125
Union Printers' Home and Tuberculosis Sanatorium	Colorado Springs, Colo.	Indep	420	100	..	..	...	No	1	Varies	Indef.	13	26	$125 and up
National Jewish Hospital	Denver	Indep	250	100	..	..	200	Yes	2	Varies	Indef.	22	55	$100-200
Sanatorium of the Jewish Consumptives' Relief Society	Spivak, Colo.	Indep	300	10	..	..	322	Yes	1	Varies	Indef.	[16]	..	$125 and up
Meriden State Tuberculosis Sanat.	Meriden, Conn.	State	252	..	..	..	543	Yes	1	Varies	Indef.	[16]	..	$150-300
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	138	Yes	1	Jan. & July	12	184	46	$100
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	State	404	..	..	..	838	Yes	2	Varies	Indef.	20	15	$144
City of Chicago Municipal Tuberculosis Sanatorium	Chicago	City	1,241	100	..	..	2,889	Yes	2	Varies	Indef.	103	48	$175 and up
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	1	July	12	149	76	$112.50-220
Macon County Tuberculosis Hospital	Decatur, Ill.	Co	80	90	..	10	95	Yes	1	July	36	[16]	..	$125
Rockford Municipal Sanitarium	Rockford, Ill.	CyCo	120	100	..	..	109	Yes	1	Sept.	12	[16]	..	$100
Boehne Tuberculosis Hospital	Evansville, Ind.	Co	115	58	35	7	328	No	1	July	Indef.	23	79	$150
Indiana State Sanatorium	Rockville, Ind.	State	205	100	..	..	400	Yes	1	Varies	Indef.	[16]	..	$50
Baltimore City Hosps. (Tuberculosis)	Baltimore	City	182	100	..	..	...	No	2	.....	24	74	44	[25]
Boston Sanatorium	Boston	City	616	..	..	..	1,074	....	5	Varies	12-36	...	..	$79.17 and up
Westfield State Sanatorium	Westfield, Mass.	State	306	98	..	2	389	Yes	1	.....	.....	0	0	.....
Belmont Hospital	Worcester, Mass.	City	275	100	..	..	...	Yes	1	Varies	Indef.	25	40	$133
American Legion Hospital	Battle Creek, Mich.	State	375	100	..	..	401	No	2	Varies	Indef.	5	11	$125-200
Herman Kiefer Hospital	Detroit	City	1,400	98	..	2	...	No	11	July	12	174	36	$125-200
Michigan State Sanatorium	Howell, Mich.	State	485	100	..	..	753	Yes	3	Varies	Indef.	12	40	$150-200
Jackson County Sanatorium	Jackson, Mich.	Co	64	91	8	1	...	Yes	1	Sept.	Indef.	[16]	..	$25-50
Morgan Heights Sanatorium	Marquette, Mich.	Co	90	98	1	1	174	Yes	1	July	12	[16]	..	$100

Numerical references will be found on page 608.

		Control	Capacity	Classification of Patients (Percentage) Free	Part Pay	Full Pay	Patients Treated Under Listed Specialty	Outpatient Service	Number of Residencies	Time of Appointment	Length of Service in Months	Number of Autopsies	Autopsy Percentage	Salary per Month
TUBERCULOSIS—(Continued)														
William H. Maybury Sanatorium	Northville, Mich.	City	837	..	..	..	1,460	Yes	5	Jan. & July	Indef.	13	31	$150 and up
Nopeming Sanatorium	Nopeming, Minn.	Co	230	98	1	1	...	Yes	2	Varies	Indef.	5	17	$100
Glen Lake Sanatorium	Oak Terrace, Minn.	Co	700	93	6	1	...	Yes	3	March	Indef.	37	49	$10
City Isolation Hospital	St. Louis	City	250	94	2	4	172	No	1	May	Indef.	54	38	$150
Robert Koch Hospital	St. Louis	City	503	100	..	..	773	No	6	March	Indef.	24	32	$135
Mt. St. Rose Sanatorium	St. Louis	Chrch	110	55	39	6	316	....	1	Varies	12 [6]	32	46	$30-55
New Jersey Sanatorium	Glen Gardner, N. J.	State	494	..	..	..	...	Yes	2	Varies	Indef.	[16]	..	$83.33 and up
Jersey City Hospital	Jersey City	City	1,200	90	5	5	438	Yes	1	Varies	Indef.	197	22	$100 and up
Essex Mountain Sanatorium	Verona, N. J.	Co	415	98	2	..	845	No	3	Varies	Indef.	15	8	$200
Montefiore Hospital Country Sanat.	Bedford Hills, N. Y.	Indep	220	10	90	..	479	No	3	Jan. & July	12	[27]	..	$75-200
Loomis Sanatorium	Loomis, N. Y.	Indep	202	..	..	..	...	No	1	Varies	12	[16]	..	$125
Metropolitan Life Insurance Co. Sanat.	Mt. McGregor, N. Y.	Indep	360	100	..	..	236	No	1	Varies	Indef.	5	56	$125 and up
Bellevue Hospital	New York City	City	2,084	100	..	..	2,842	Yes	8	Jan. & July	12	903	23	$83.33
Lenox Hill Hospital	New York City	Indep	477	18	..	82	76	Yes	1	Varies	24	124	39	$90-128
Metropolitan Hospital	New York City	City	1,620	100	..	..	1,352	Yes	5	Jan. & July	12-24	295	24	$75-117.90
Montefiore Hosp. for Chronic Diseases	New York City	Indep	706	84	5	11	...	Yes	2	Jan. & July	12	345	63	$90-100
New York State Hospital	Ray Brook, N. Y.	State	300	100	..	..	297	No	1	Varies	Indef.	[16]	..	.....
Iola-Monroe County Tuberculosis Sanatorium	Rochester, N. Y.	Co	400	92	3	5	1,007	Yes	2	Varies	Indef.	32	53	.....
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	16	Jan. & July	12	323	53	$100-117.90
Trudeau Sanatorium	Trudeau, N. Y.	Indep	185	6	94	..	275	No	2	Varies	12-36	[16]	..	$125 and up
Grasslands Hospital	Valhalla, N. Y.	Co	903	89	2	9	516	Yes	6	Jan. & July	Indef.	296	67	$80-200
North Carolina Sanatorium	Sanatorium, N. C.	State	450	..	100	..	1,170	Yes	2	Varies	Indef.	10	31	$150 and up
City Hospital	Cleveland	City	1,585	..	..	..	467	Yes	1	Jan.	12	621	44	$46.50
Ohio State Sanatorium	Mt. Vernon, O.	State	245	..	..	..	631	No	2	Varies	Indef.	[16]	..	$131.66
Sunny Acres, Cleveland T.B. Sanat.	Warrensville, O.	City	462	99	1	..	877	Yes	5	Jan. & July	12	4	13	$125-170
Philadelphia General Hospital	Philadelphia	City	2,515	..	..	..	1,745	Yes	1	July	12	1,625	47	$100-150
Rhode Island State Sanatorium	Wallum Lake	State	430	91	9	..	403	Yes	4	Varies	Indef.	19	23	$166.66 and up
Pine Breeze Sanatorium	Chattanooga, Tenn.	Indep	225	94	4	2	...	Yes	1	Varies	12	4	7	$120 and up
Homan Sanatorium	El Paso, Tex.	Indep	110	..	9	91	208	No	1	Nov.	24	1	15	$75
St. Joseph's Sanatorium	El Paso, Tex.	Chrch	75	10	10	80	113	No	1	June	12	[16]	..	$100
Wisconsin State Sanatorium	Statesan	State	238	94	5	1	382	No	2	Varies	Indef.	2	7	$175-225
UROLOGY														
Hillman Hospital	Birmingham, Ala.	Co	475	100	..	..	517	Yes	2	Jan.	12	266	31	$30-45
Los Angeles County Hospital	Los Angeles	Co	3,572	100	..	..	1,793	Yes	3	Jan. & July	24	1,942	53	$10-75
Stanford University Hospitals	San Francisco	Indep	329	8	43	49	225	Yes	1	Jan.	12	71	48	$67.50
University of California Hospital	San Francisco	State	287	..	..	..	467	Yes	1	Feb.	12	131	69	$25-75
New Haven Hospital	New Haven, Conn.	Indep	504	12	76	12	357	Yes	1	Jan. & July	12	184	46	$100
Grady Hospital, Emory University Division (Colored Unit)	Atlanta, Ga.	City	266	100	..	..	220	Yes	1	Jan. or Feb.	12	161	22	Varies
University of Chicago Clinics	Chicago	Indep	408	27	67	6	...	Yes	1	July	12	149	76	$112.50-220
University Hospitals	Iowa City	State	1,008	89	6	5	959	Yes	3	Jan.	36	301	57	Up to $70.83
Charity Hospital	New Orleans	State	1,809	100	..	..	...	Yes	1	May or June	24	1,400	46	Varies
Touro Infirmary	New Orleans	Indep	366	35	39	26	...	Yes	1	Jan. or Feb.	12	99	38	$25
Johns Hopkins Hospital	Baltimore	Indep	1,004	58	30	12	...	Yes	3	June	Indef.	438	72	$41.66-83.33
Beth Israel Hospital	Boston	Indep	200	22	7	71	214	Yes	1	Varies	24	96	41	$83.33
Massachusetts General Hospital	Boston	Indep	405	53	34	13	425	Yes	2	Varies	12-24	289	57	$41.66 and up
Battle Creek Sanitarium	Battle Creek, Mich.	Indep	1,013	5	35	60	...	No	1	Jan.	12	7	26	$125-150
City of Detroit Receiving Hospital	Detroit	City	764	100	..	..	...	Yes	1	April	12	430	41	$83.33-125
Ancker Hospital	St. Paul	CyCo	1,050	98	1	1	452	Yes	1	March	12	492	64	$40
St. Louis City Hospital	St. Louis	City	885	100	..	..	685	Yes	1	March	12	382	25	$125
Bayonne Hospital and Dispensary [26]	Bayonne, N. J.	Indep	215	79	6	15	259	Yes	1	Varies	12	72	40	None
Jersey City Hospital	Jersey City	City	1,200	90	5	5	1,212	Yes	1	April & Nov.	24	197	22	$100 and up
Newark City Hospital	Newark, N. J.	City	770	100	..	..	576	No	1	July	12	368	30	None
Kings County Hospital	Brooklyn	City	1,660	..	..	..	981	Yes	2	Jan. & July	12	727	19	[8]
Long Island College Hospital	Brooklyn	Indep	480	17	32	51	358	Yes	2	Feb.	12	175	46	$45
Buffalo City Hospital [3]	Buffalo	CyCo	1,065	71	27	2	418	Yes	2	June	24	352	34	.....
Bellevue Hospital	New York City	City	2,084	100	..	..	2,063	Yes	3	Jan. & July	12-24	903	23	$83.33
Metropolitan Hospital	New York City	City	1,620	100	..	..	413	Yes	1	Jan. & July	12	295	24	$75-117.90
Morrisania City Hospital	New York City	City	539	100	..	..	599	Yes	2	Jan. & July	12	334	33	None
New York Hospital	New York City	Indep	823	18	58	24	383	Yes	2	Feb.	12 [6]	183	58	$8.32-25
N. Y. Post-Grad. Med. School and Hosp.	New York City	Indep	415	12	4	84	313	Yes	1	March	12	115	36	$80.25
Presbyterian Hospital	New York City	Indep	641	..	..	..	...	Yes	5	Jan. & July	24	199	43	$41.66 and up
Strong Memorial and Rochester Municipal Hospitals	Rochester, N. Y.	Indep	560	56	24	20	...	Yes	1	Feb.	12	352	63	$41.66 and up
Sea View Hospital	Staten Island, N. Y.	City	1,642	100	..	..	...	Yes	1	Jan. & July	12	323	53	$100-117.90
University Hospitals	Cleveland	Indep	539	47	8	45	562	Yes	1	Jan.	12 [5]	335	65	$20-75
Starling-Loving University Hospital	Columbus, O.	State	276	60	14	26	...	No	1	Dec.	12	132	41	$83.33
Graduate Hospital of the Univ. of Pa.	Philadelphia	Indep	475	31	12	57	215	Yes	1	Jan.	12	82	49	None
Hospital of the Univ. of Pennsylvania	Philadelphia	State	594	37	23	40	275	Yes	1	March	12	197	54	None
Presbyterian Hospital	Philadelphia	Chrch	426	46	10	44	...	Yes	1	Varies	12	97	39	None
Mercy Hospital [1]	Pittsburgh	Chrch	670	40	25	35	261	Yes	1	Jan.	12-48	103	30	None [11]
University of Virginia Hospital	University	State	315	22	46	32	460	Yes	1	Dec.	24	116	43	$25-75
Milwaukee County General Hospital	Wauwatosa, Wis.	Co	1,050	94	1	5	556	Yes	1	May	12	283	25	$100

1. Fellowships.
2. Includes urology.
3. Residencies at Buffalo City Hospital are three year appointments including internship. Salary and bonus paid in lieu of maintenance.
4. $300 bonus.
5. Usually twelve months but may be extended.
6. Subject to reappointment.
7. Includes full pay patients.
8. No salary first six months; $100 per month last six months.
9. Includes part pay patients.
10. University of Oregon Medical School Hospitals include Multnomah County Hospital and Doernbecher Memorial Hospital for Children (state control).
11. $50 bonus.
12. Chicago Maternity Center is not a hospital; outpatients only.
13. No salary first eight months; $25 per month last four months.
14. Second and fourth years at Detroit Receiving Hospital.
15. Affiliated Barnes Hospital, St. Louis, Gynecology.
16. Twenty-five deaths or less.
17. One fellowship; six residencies.
18. $100 bonus.
19. Includes obstetrics.
20. Additional stipend from University of Pennsylvania School of Medicine.
21. Three months' training in pediatric neurology given at Emma Pendleton Bradley Home, East Providence.
22. Training in radiotherapy only.
23. Two of the residents spend six months on surgery and six months on urology.
24. $60 bonus.
25. No salary first year; $50 per month second year.
26. First six months spent at New York Post-Graduate Medical School, New York City.
27. See Montefiore Hospital for Chronic Diseases, New York City.
28. Includes pediatrics.
29. Includes neurosurgery.
30. Includes neurology.
31. Three residencies include obstetrics.

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SATURDAY, AUGUST 25, 1934

THE ADMINISTRATION STUDIES SOCIAL INSURANCE

In the message that he gave to the American people just before leaving for Hawaii, President Franklin D. Roosevelt indicated his interest in social insurance, including all means of securing the worker against every type of misfortune or natural disability that might occur to him. Unemployment, sickness, old age and death are obviously the major difficulties that might occur to almost every man. Perhaps a more complete interpretation of the President's point of view was offered by Secretary of Labor Frances Perkins in a radio address, August 13. She indicated that the major objective of the national administration has been economic recovery and that this will continue to be the principal objective until recovery is complete. Before departing on his vacation, however, the President created a committee of cabinet and other officials on economic security. Of this committee Miss Perkins is chairman, the remaining members including the Secretary of the Treasury, the Secretary of Agriculture, the Attorney General and the Federal Emergency Relief Administrator. This committee has now appointed a technical board to study the questions and to advise it in formulating legislation for presentation to the next Congress. Of this board the executive director is Edwin E. Witte, labor economist long connected with the industrial commission and the legislative reference service of the state of Wisconsin. The staff already includes Mrs. Barbara Nachtrieb Armstrong of the University of California, author of "Insuring the Essentials," Edgar Sydenstricker and Dr. Bryce Stewart of New York. Miss Perkins states that the President is expected in the near future to name an advisory commission composed of representative citizens from all parts of the country to aid still further the development of the program for economic security.

After discussing the importance of protection of the worker, Miss Perkins pointed out that "our best hope for protecting the worker against the hazards and vicissitudes of life lies in the application of the principles of insurance." She pointed out that forty-four states now have workmen's compensation laws, forty-six states have mothers' pension laws, and twenty-eight states have old age pension laws. She emphasized the fact that some provisions are now being made for medical and hospital care to indigents through relief and other agencies. She said, however, that when all of our methods for providing economic security are brought together, they do not begin to meet the needs of the situation. The Committee on Economic Security was therefore developed to work out some plan for solving the difficulties.

Miss Perkins indicated that it is not possible to present a comprehensive program of social insurance to cover farmers and self-employed people as well as wage earners for the next Congress, although she recognized great advantages in a unified system of social insurance presented in one complete whole. She pointed out that she had suggested a program for social action in New York twenty years ago and that all but one of the items then suggested were now in operation in that state. The appointment by the President of the Committee on Economic Security is assurance that the President intends to go ahead with his program, and the committee interprets the executive order that created it as a mandate to survey the entire field and outline a complete program for economic security.

Thus the point of view of the administration is clearly set forth and it remains for the medical profession to make certain that its point of view in relationship to medical practice is fully understood by the committee. At the annual session of the American Medical Association in Cleveland, ten principles for the guidance of the medical profession in setting up any plan were unanimously adopted. The medical profession, in setting forth these principles, aims to protect the quality of medical service rendered to the people and to safeguard the relationship between patient and physician which is fundamental to the best type of medical practice. The staff of the technical board developed by the Committee on Economic Security thus far named is not such as to warrant any expectation of recognition of the medical point of view by the committee. Indeed, the views of Sydenstricker, a member of the staff of the Milbank Foundation, are so completely antagonistic to the medical point of view that one wonders why he should have been among the first to be selected by the committee in developing its work. In the address that he made before the American Academy of Political and Social Science in Philadelphia, February 7, Sydenstricker indicated his opposition to our entire economic system. Thus he said "Any program of action to be given serious consideration at present must assume the continuance of the economic system under which we now live—a system that is characterized by a grossly unequal distribution of wealth and an inability to pay for the essentials or luxuries of life." Mr. Sydenstricker's answer to the problem of medical care is an insurance system that will go

beyond the systems already established abroad and provide every type of medical service to every member of the family of people having incomes below the amount that is sufficient to purchase medical service in any contingency.

In a more recent statement, in the *Literary Digest* for July 7, Mr. Sydenstricker begins to modify his views or perhaps to change them because of the nature of his new audience. He urges, now, a very gradual development of new methods without disturbing too much our present system of practice. Notwithstanding this softening of the proposals emanating from the Milbank Foundation, the medical profession will not consider itself adequately represented in the development of any plan for sickness insurance by the group involved if Mr. Sydenstricker is the only authority on what constitutes proper arrangements for medical care.

In the discussions of this topic that have been carried on during the last ten years, a rather definite alinement of students of the subject has taken place according to their points of view. THE JOURNAL has repeatedly listed those who may be considered as definitely opposed to the policies of the organized medical profession, which embraces almost every competent physician in the United States. The medical profession will probably find it difficult to lend its approval to any plan or system developed by any committee or group that not only fails to include representatives of the medical profession but thus far has failed even to give adequate opportunity to the medical profession to present its point of view officially in these matters. It is to be hoped that the American medical profession merits enough recognition from our government to cause that government to seek its advice and its assistance in the development of these plans from the very first step in the consideration.

AORTIC STENOSIS

The opening from the left ventricle into the aorta is closed during diastole by the aortic semilunar valves. Whenever these three valves become stiffened or fused by disease, the opening into the aorta is narrowed and the free flow of blood from the ventricle is obstructed. True aortic stenosis has been considered rare. Heart disease has, however, become the leading cause of death, and it may be that aortic stenosis occurs more frequently than has been supposed. In reviewing 6,800 necropsy reports of all types of disease at the Massachusetts General Hospital, McGinn and White [1] found 123 cases of aortic stenosis. In a clinical group of 4,800 cardiovascular cases they found 113 cases of aortic stenosis. The incidence in the two groups was therefore 1.8 and 2.3 per cent, respectively, which was higher than had been anticipated.

Since the basal cardiac area has been called the field of romance in diagnosis, it is not strange that the criteria for a diagnosis of aortic stenosis have changed in the last generation. When a basal systolic murmur alone permitted a diagnosis of aortic stenosis, the lesion was diagnosed too frequently. Then followed an overcautious period when the criteria required were a loud aortic systolic murmur, an aortic systolic thrill, absence of the second aortic sound, a plateau or anacrotic pulse, and perhaps an aortic diastolic murmur. The preferable diagnostic position, McGinn and White have found, lies between these extremes. The diagnosis may be justified when there is a harsh and loud aortic systolic murmur transmitted to the neck, whether or not it is accompanied by the foregoing confirmatory signs. A loud systolic murmur in the second right interspace should suggest aortic stenosis when there is evidence of other valvular defects or a history of rheumatic infection and when evidence of syphilitic aortitis or of marked hypertension is absent. It is interesting that a clinical diagnosis had been made in only one third of the 123 cases of aortic stenosis found among the 6,800 necropsies. Aortic stenosis is missed much more often when it is present, the Boston investigators believe, than it is diagnosed when it is absent. A clinical diagnosis of aortic insufficiency was frequently made in this series of cases; in fact, that lesion also was present in fifty-two of the aortic stenosis cases that came to necropsy. About every third case of mitral stenosis in the necropsy group also presented aortic stenosis. In the clinical group the ratio was much lower, but in the second half of this group, when perhaps the investigators were more zealous, twice as many cases of aortic stenosis were discovered as in the first half of the series.

There was a history of an important infection in one third of the necropsy cases of aortic stenosis and in one half of the clinical cases. The infections most frequently recorded were tonsillitis, pneumonia, influenza, typhoid and gonorrhea. Syphilis was not diagnosed in any case in the clinical series and in only four cases in the necropsy series.

The patients complained commonly of dyspnea, orthopnea and edema, and of faintness or dizziness or actual syncope. About 19 per cent of the patients had angina pectoris and 15 per cent cardiac asthma. The pulse was described as normal in the majority of these cases. A Corrigan pulse was noted in only twelve cases in the entire series, and a plateau pulse was noted in only nine cases. The diastolic blood pressure varied between 80 and 110 mm. of mercury. The average pulse pressure was unexpectedly high, 60 mm. of mercury. There was cardiac enlargement to the left, found in all but ten of the total number of cases. Sometimes the fluoroscope would reveal the calcified aortic valves. The most common observation in the electrocardiogram was left axis deviation, although in some cases it was not present. Abnormal T waves exclusive of the bundle branch block cases were present in sixty-six of the 110 electrocardiograms.

1. McGinn, Sylvester, and White, P. D.: Clinical Observations on Aortic Stenosis, Am. J. M. Sc. **188**: 1 (July) 1934.

Of the 236 patients with aortic stenosis, 172 were known to be dead; twelve died following operations and nine others died suddenly. The majority died of congestive heart failure. The average number of attacks of congestive failure was two.

From this study it is evident that all grades of aortic stenosis exist. The lesion is not uncommon, especially in males. While it is less serious than aortic regurgitation, aortic stenosis is important even if mild, because of the progressive nature of the lesion and because of its association with congestive heart failure. The detection of such cases is clearly dependent on the fine application of the physical diagnostic art. The making of a correct diagnosis in only one third of the instances established post mortem is an indication of the necessity for more attention to this phase of medical practice.

THE NEW AMERICAN MEDICAL DIRECTORY

After fourteen months the work of compiling and printing the Thirteenth Edition of the American Medical Directory has been completed and copies are now available for general distribution. The importance of this volume as a source of authoritative data of the medical profession and its allied interests is widely recognized.

The 1934 directory contains 2,451 pages and lists 178,516 physicians in the United States, its dependencies, Canada and Newfoundland, and American graduates and licensees temporarily practicing in foreign countries. It supplies also information regarding the medical practice acts of various states, the Constitution, By-Laws and Principles of Medical Ethics of the American Medical Association, the membership of special organizations of physicians, and the names and locations of medical schools, medical journals, medical libraries, state institutions, hospitals, sanatoriums and charitable institutions. All the information is verified and in form for convenient reference.

Three years has passed since the Twelfth Edition appeared. More than 92,541 changes of address have been made, 18,727 names of new physicians added and 11,473 dropped from the book on account of death. These figures, however, do not include the thousands of changes in society affiliations, teaching positions in medical schools, and specialties.

The Atlantic and Pacific states show the largest increase in the number of physicians. The Central and Southern states, with the exception of Wisconsin and Texas, are practically unchanged or show losses. This is probably accounted for by the continuation of physicians to locate in larger cities and the migration of physicians from rural districts to more thickly populated centers. Good roads have made it possible for physicians to widen their areas of practice. In the states showing increases, New York leads the list with a gain of 1,804; the 1931 edition contained 21,008 physicians, while the 1934 edition has 22,812. Other states with noticeable gains are New Jersey, Pennsylvania, Maryland, California, Texas, Wisconsin and Connecticut. The seventeen states that show losses are Arkansas, Alabama, Kentucky, Indiana, Kansas, Maine, Missouri, Montana, South Dakota, Arizona, Colorado, Georgia, Mississippi, Nebraska, North Dakota, Oklahoma and West Virginia. The first nine of these are farm states or have a large rural population. Arkansas in 1914 had 2,652 physicians; today it has only 1,890. Among the twenty-six largest cities in the United States, New York is in first place with a gain of 596 physicians and Kansas City, Mo., is in twenty-sixth place with a loss of 65.

In 1914 the total number of physicians listed in the Directory was 153,496; in 1925, 161,358; in the new 1934 edition the number is 178,516. The average yearly gain for the first eleven years was 714; for the last nine years it was 1,906. This increase is due to the larger number of graduates from American medical schools.

The Directory, or Biographical Department, as it is often referred to, was established in 1905. At that time the only national directories in existence were those published as private enterprises and for profit. Usually the only data given were the name, address and medical school, but any physician could, by payment of a fee or even by merely subscribing to the book, have several inches of flattering, and oftentimes untruthful, information printed about himself. A goodly portion of this display advertising was paid for by physicians of questionable character. Space in the American Medical Directory cannot be bought. All the basic information is checked and verified from official sources. Not only the name, address and medical school of the physician are given but also his year of birth, year of licensure in the state in which he is located or practicing, specialty, society affiliations and teaching positions. To save space, much of the information is expressed in keys and symbols. A general knowledge of the exact meanings of these abbreviations can easily be gained by referring to the front inside cover and pages 6 and 7 of the Directory. However, to get the best service the introductory contents and the various indexes should also be carefully consulted.

The Directory continues the policy in this issue of publishing in connection with each state and the provinces of Canada a list of those hospitals ethically operated in accordance with the "Essentials of a Registered Hospital." Altogether the principal facts concerning 6,612 hospitals in the United States and 754 in Canada and Newfoundland are presented. Separate lists of hospitals approved for internships and for residencies in specialties are to be found on pages 95 to 114, and indicated by proper symbols in the lists of hospitals in connection with the various states. All

these institutions have been carefully investigated and have been found to present suitable programs for advanced training during the internship and subsequent years of medical education.

Other useful information given, relating to the medical profession, are lists of medical officers in the government service, licensing boards, state boards of health, county and district health officers, officers of constituent state medical associations and component county and district medical societies.

Careful attention has been given to the typography of the book to keep it condensed and yet easy to read. For example, the surnames appear in the index in boldface type, which expedites locating the physicians. While the book is only forty-five pages larger than the previous edition, it includes 6,167 more names than the last directory.

To the secretaries of the various medical licensing boards of the United States and Canada, to the deans of medical schools, to the officers of component county societies and constituent state associations, to the thousands of physicians and correspondents who have so cordially assisted in making possible this edition, the Biographical Department extends thanks and appreciation.

Current Comment

RECENT ACTIVITIES OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The first classification of medical schools by the Council on Medical Education and the Carnegie Foundation's report on medical teaching were published a quarter of a century ago. The resulting improvement in the standards of medical education in the United States is without a parallel in history. This transformation should not blind one to the fact that much remains to be done to keep the training of physicians fully abreast of the medical and scientific knowledge of the times. In order to ascertain what is the current practice of the medical schools of the United States and Canada, the Council is undertaking a comprehensive and intensive resurvey of the institutions engaged in medical teaching. By correspondence and by personal visits an effort will be made to get a trustworthy record of the work of each school. Special attention will be paid to the qualifications of the faculty and the effectiveness of clinical teaching. Inspections will begin as soon as schools open in the fall. Supplementing this objective study, the Council is also planning a reappraisal of the aims and methods of medical teaching. To aid in the formulation of standards and policies, an advisory committee has been created, which includes in its membership representative leaders in the field of medical education. Cooperation of the Association of American Medical Colleges and the Federation of State Medical Boards has also been secured. These activities of the Council give definite promise of bettering the standards of medical practice. The need for this new work is a reply to those who have urged that the Council on Medical Education had completed the task for which it was founded. The necessity for constant vigilance demands the maintenance of this body as a protection to both the public and the medical profession.

MISREPRESENTATION

Just as long as the antivivisectionists permit their activities to be motivated emotionally rather than rationally, they continue to expose the extreme weakness of their arguments. A particularly flagrant example of distortion of fact has come to light in connection with an editorial in a recent issue of THE JOURNAL.[1] A liberal excerpt of the original statement follows:

> To many it may seem strange that in this day "laboratory medicine" needs any apologies or defense. Yet not long ago Mendel[2] of Yale University said that there are today not a few physicians as well as other friends of medicine who, although admitting the noteworthy contributions of animal experimentation, nevertheless urge that its dominant importance is passing. Though the pendulum of enthusiasm for a laboratory innovation may at times swing too far, it soon reaches a stable level. In his defense of scientific experimentation in medicine, Mendel made a vigorous plea that devotees of practical medicine and surgery refrain from unwarranted derogatory attacks on one of the best helps of their profession in the past. It is difficult enough, he added, to fight suffering, disease and death without being obliged to fight the ignorance and prejudices of those who would tie the arms of the laboratory worker.

To a mature individual with ordinary education and the ability to understand clear English, the meaning conveyed by the foregoing quotation is inescapable. Yet in the July 1934 issue of the *Starry Cross*, the official organ of the American Antivivisection Society, there appears in the column entitled Heard and Read the following comment:

> A surprising editorial in the Journal of the American Medical Association (May 26, 1934) quotes L. B. Mendel of Yale University to the effect that "There are today not a few physicians as well as other friends of medicine who, although admitting the noteworthy contributions of animal experimentation, nevertheless urge that its dominant importance is passing." This is a great deal for a pro-vivisectionist to admit publicly, and is a welcome indication that the vivisecting profession is being forced to admit, however slowly, that its boosting of vivisection is bringing it into wider and wider disrepute with a consequent disastrous effect upon medical pocketbooks and reputations. It is safe to say that when the profession at large does awake from its self-induced delusions regarding the cruel and disgraceful practice of vivisection, it will turn its back upon the once-vaunted "scientific research" as completely and with the same scorn as that accorded its other fads of yesterday.

A comparison of the two quotations is sufficient comment on the methods of misrepresentation employed by the antivivisectionist. It provides another example of the tendency of the "will to believe" to becloud intellectual integrity.

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1. Hyperparathyroidism: A Chapter in Successful Laboratory Research, editorial, J. A. M. A. **102**: 1764 (May 26) 1934.
2. Mendel, L. B.: Scientific Experiment and Medicine, Science **76**: 393 (Nov. 4) 1932.

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, Central daylight saving time. The next three broadcasts will be as follows:

August 30. Your Child Enters School, Morris Fishbein, M.D.
September 6. Football Hazards, Morris Fishbein, M.D.
September 13. Common Eye Troubles, William C. Benedict, M.D., representing the meeting of the American Academy of Ophthalmology and Otolaryngology, in Chicago.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Coleman D. McLeod, Fairfield, has been appointed health officer of Covington County, with headquarters at Andalusia.——Dr. Ernest G. Moore, Whatley, has been made health officer of Bullock County, succeeding Dr. William A. Stanley, who has gone to Coffee County in the same capacity.

CONNECTICUT

Resolution Urges Prohibition of Fireworks.—The sale and use of fireworks in New Haven are disapproved in a resolution unanimously adopted by representatives of civic organizations and the board of health, July 18. The resolution requests the board of aldermen of the city to enact a suitable ordinance prohibiting the sale and use of fireworks.

Clinical Congress of State Society.—The Connecticut State Medical Society will conduct its tenth clinical congress in New Haven, September 18-20. On the program will be the following physicians:

George E. Bennett, Baltimore, Symptomatology, Diagnosis and Treatment of Lumbosacral and Sacro-Iliac Strain.
Russell L. Cecil, New York, Treatment of Arthritis from the Clinical Standpoint.
Robert B. Osgood, Boston, Etiologic Theories and Therapeutic Trends in Chronic Arthritis.
Frank R. Ober, Boston, Diagnosis and Treatment of Common Disabilities Causing Pain in the Upper Extremity.
Howard Fox, New York, Diagnosis and Treatment of Common Skin Diseases.
Francis G. Blake, New Haven, Treatment of Pneumococcal, Lobar Pneumonia, with Special Consideration of the Use of Antipneumococcus Serum and Artificial Pneumothorax.
Percy S. Pelouze, Philadelphia, Gonorrhea in the Male and Its Treatment.
Oscar M. Schloss, New York, Pathogenesis of Pyuria in Early Life.
Alfred Stengel, Philadelphia, Psychoses Complicating Other Diseases.
Stanhope Bayne-Jones, New Haven, Prophylactic Vaccination.
Max A. Goldzieher, New York, Diagnosis of the Ordinary Endocrine Disorders.
Alexander B. Gutman, New York, Therapeutic Uses of Parathormone.
Carl H. Greene, New York, Therapeutic Use of the Cortical Hormone of the Suprarenal Gland.
John Rock, Boston, Useful Endocrine Preparations in Gynecology.
C. Macfie Campbell, Boston, Importance of the Consideration of the Personality in General Practice.

Afternoon sessions each day will be devoted to demonstrations and round table discussions on subjects presented at morning sessions. Dinner meetings have been omitted this year and the scientific program will be continued into the evenings of the first two days of the congress. The registration fee has been reduced to $2. Dr. Creighton Barker, 129 Whitney Avenue, New Haven, is chairman of the committee on publicity and registration.

DISTRICT OF COLUMBIA

Personal.—Dr. Ralph L. Lawrence has been promoted and commissioned as a surgeon in the regular corps of the U. S. Public Health Service, to rank as such from June 30.

Health Council Established.—The District of Columbia Health and Hospital Council, composed of representatives of medical, dental and civic societies, was recently formed under the sponsorship of the Council of Social Agencies. The council will be available to all government authority as a medium of ascertaining opinion and reaction of the majority in professional, administrative and lay organizations representing the citizens in the district, according to a statement issued by Ross Garrett, health secretary of the Council of Social Agencies. Physicians who have volunteered to serve on the new health council include Drs. Adolphus B. Bennett, Prentiss Willson, William H. Hough, Charles R. L. Halley, William Charles White, Loren B. T. Johnson, Arthur C. Christie, J. Russell Verbrycke Jr., Thomas A. Groover, Henry C. Macatee, William J. Thompkins and Paul B. Cornely. C. Willard Camalier, D.D.S., G. Albert Smith, D.D.S., and Webb W. Wyman, D.D.S., are dentists named on the committee.

IDAHO

State Medical Meeting at Lewiston.—The annual session of the Idaho State Medical Association will be held in Lewiston, September 7-8. Speakers will be:

Dr. Verne C. Hunt, Los Angeles, Operability of Carcinoma of the Stomach; Surgical Procedure Involving the Common Duct in Biliary Tract Disease.
Dr. William D. Stroud, Philadelphia, Coronary Disease; Digitalis in Treatment of Cardiovascular Disease from the Standpoint of the General Practitioner.
Dr. Thomas F. Mullen, San Francisco, Plastic Reconstruction of the Esophagus.
Dr. Henry Odland, Seattle, Wash., Problems in the Treatment of Eczema.
Dr. Montague S. Woolf, San Francisco, A Critique of the Operations in Vogue for Cancer of the Rectum.
Dr. Hale A. Haven, Seattle, Differential Diagnosis of Spinal Cord Tumors.
Dr. Joseph A. Pettit, Portland, Ore.
Dr. Eugene L. Spohn, Coeur d'Alene, Care of County Indigent.
Dr. Duncan Alexander, Twin Falls.

Dr. Olin West, Chicago, Secretary, American Medical Association will address a scientific session, September 7, and the annual banquet in the evening.

ILLINOIS

Health at Peoria.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended August 11, indicate that the highest rate (18.8) appears for Peoria and the rate for the group of cities as a whole was 9.7. The death rate for Peoria for the corresponding week of 1933 was 12.4 and for the group of cities, 9.2. The annual rate for the eighty-six cities for the thirty-two weeks of 1934 was 11.8, as against a rate of 11.2 for the corresponding period of last year. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

Chicago

Health Lectures at A Century of Progress.—The following lectures will be delivered by members of the Chicago Medical Society during the week beginning August 27, as a part of the regular series sponsored each week at A Century of Progress by the society:

August 27: Melvin R. Guttman, Hoarseness: A Warning Sign of Cancer.
August 28: (Not announced.)
August 29: Cleveland J. White, The Ringworm Situation.
August 30: Joseph E. Schaefer, Infections of the Mouth.
August 31: Frederick C. Test, Feet and Posture.
September 1: Charles Drueck, Poisoning from the Bowels.

INDIANA

Society News.—Dr. John A. Ritchey, Jonesboro, addressed the Grant County Medical Society in Marion, July 24, on allergy.——Dr. Jean P. Pratt, Detroit, will address the Tippecanoe County Medical Society, Lafayette, September 13, on "Endocrine Disturbances Peculiar to Women." A clinic on endocrine disturbances will be held at St. Elizabeth's Hospital in the afternoon.——The Hamilton County Medical Society at its monthly meeting, July 6, entertained, among others, members of the county council, county commissioners, trustees, two Noblesville ministers, trustees of the Hamilton County Hospital, Noblesville, and several of the laymen. A banquet was served at the hospital.

Free Arsphenamine for Indigents.—A plan was recently adopted by the Indiana Division of Public Health whereby free neoarsphenamine and sulpharsphenamine are furnished to physicians for the treatment of indigent infectious syphilitic patients who may endanger other persons, the *Journal of the Indiana State Medical Association* reports. Under this plan, patients are to be treated until they are noninfectious and no longer a menace to public health. The division also intends to furnish serum to expectant mothers infected with syphilis

during pregnancy. It was pointed out that in communities where public health clinics are available, or where clinics are being operated at the expense of the city or city and county, indigent patients are expected to report directly to the clinic for antisyphilitic treatments.

KENTUCKY

State Health Agency Reorganized.—Under a reorganization bill passed by the last legislature, the state board of health will henceforth be known as the State Department of Health of Kentucky and the state health officer becomes the state health commissioner. A board of health will elect the commissioner, who will serve as secretary of the board. Registrations in the professions allied with medicine will be conducted by the same boards as before, but these boards will be divisions of the department of health, as will the Crippled Children's Commission.

Society News.—Dr. Clifford N. Heisel, Covington, addressed the Grant County Medical Society, Williamstown, June 20, on "Diagnosis of Acute Mastoid Conditions."——Drs. Walter E. Vest and Robert J. Wilkinson, Huntington, W. Va., addressed the Lawrence County Medical Society, Louisa, recently, on abscess of the lung and cancer of the breast, respectively.——Dr. Noah H. Short, Norton, Va., read a paper on sinusitis at a recent meeting of the Letcher County Medical Society, Whitesburg.——Drs. Oscar O. Miller and George A. Hendon, Louisville, presented a course of lectures under the auspices of the Kentucky State Medical Association before the Henry County Medical Society at Eminence, August 16. Dr. Miller discussed various phases of tuberculosis, and Dr. Hendon, fracture of the hip, peptic ulcer, appendicitis and acute intestinal obstruction.——Physicians of northeastern Kentucky attended a meeting in Ashland, August 1, sponsored by the Kentucky State Medical Association, at which uterine cancer was discussed by Drs. L. Wallace Frank, Charles D. Enfield and William C. Martin, Louisville.

MAINE

Rabies Among Foxes.—Ten foxes with evidence of rabies have been killed in an area of eight square miles in Franklin and Somerset counties, the New York *Times* reported, August 4. Health and game authorities of the state ordered trappers and expert marksmen to shoot all foxes on sight. Several children and domestic animals had been bitten. All the foxes killed exhibited behavior typical of hydrophobia and in one case the presence of the disease was confirmed by laboratory examination.

MASSACHUSETTS

Personal.—Dr. George L. Stivers, for three years medical director of Belmont Hospital, Worcester, has been appointed medical director of the Fall River Hospital, Fall River.——Dr. Elmer W. Barron has been appointed physician in chief of the visiting and consulting staff of the Boston Floating Hospital.

MICHIGAN

Acting Secretary of State Society.—The Michigan State Medical Society announces that on and after September 1 Dr. Burton R. Corbus, Grand Rapids, will be acting secretary of the society. Dr. Frederick C. Warnshuis, Grand Rapids, after many years as secretary, has resigned to become secretary of the California Medical Association. After October 1 Dr. Warnshuis' address will be Room 2004, 450 Sutter Street, San Francisco.

State Medical Meeting at Battle Creek.—The one hundred and fourteenth annual meeting of the Michigan State Medical Society will be held in Battle Creek, September 11-13. Dr. Walter L. Bierring, Des Moines, Iowa, President of the American Medical Association, will address the opening general meeting Wednesday morning, September 12. Guest speakers who will address the scientific sessions include:

Dr. William A. Thomas, Chicago, Acute Hepatic Insufficiency, with Special Reference to Liver Function Tests and Therapy.
Dr. Joseph L. Baer, Chicago, Uterine Fibroids: Their Treatment and Some Correlated Factors.
Dr. Elliott C. Cutler, Boston, Surgery in the Management of Heart Disease: Preoperative and Postoperative Treatment of the Toxic Thyroid Patient.
Dr. Peter A. Bendixen, Davenport, Iowa, Fracture of the Lower Extremity.
Dr. Loyal Davis, Chicago, Treatment of Cerebrospinal Injuries.
Dr. Perrin Hamilton Long, Baltimore, Value of Prophylactic Methods in Prevention of Common Colds.
Dr. Williams McKim Marriott, St. Louis, Conditions in Childhood Associated with Hypoglycemia.
Dr. Marion B. Sulzberger, New York, Allergy in Dermatology.

All sessions will be held at the W. K. Kellogg Auditorium, and the Kellogg Hotel will be headquarters.

MINNESOTA

Dr. Parker Returns to Ireland.—Dr. Harry Lee Parker, associate professor of neurology, Mayo Foundation, University of Minnesota, Rochester, has resigned to return to Ireland as chief of staff of the Neurologic Institute of Southern Ireland and professor of neurology, Trinity College, University of Dublin. Dr. Parker is a graduate of the University of Dublin and has been associated with the Mayo Foundation since 1919.

Masseur Prescribes a Diet.—The license of Leonard James Chmel to practice massage in Minnesota will not be renewed, in accordance with a decision of the state board of medical examiners, July 14. Early in January a complaint was made to the board about treatment administered by Mr. Chmel to a patient in Minneapolis who was afflicted with asthma. Testimony showed that the patient was kept on an orange juice and beef broth diet by Mr. Chmel for five weeks, at the end of which time a physician was called. In 1930 Chmel appeared before the board to show why his license should not be renewed; at that time he was using the titles of "doctor" and "naprapath."

MONTANA

State Medical Election.—Dr. Louis H. Fligman, Helena, was named president elect of the Medical Association of Montana at the recent annual meeting in Helena. Dr. Charles E. K. Vidal, Deer Lodge, became president, Dr. Ashley W. Morse, Butte, vice president, and Dr. Elmer G. Balsam, Billings, was reelected secretary. The next annual session will be held in Billings, July 10-11, 1935.

NEBRASKA

Study of Eskimo Children.—Dr. Victor E. Levine, professor and head of the department of biological chemistry and nutrition, and Charles W. Bauer, A.M., professor of chemistry, Creighton University, Omaha, are spending four months in Alaska in a study of Eskimo children. The investigators are making physical measurements and determining the nutritional status and basal metabolism of the children. Quantitative studies of the children's blood for inorganic constituents are being made and their susceptibility to tuberculosis, diphtheria and scarlet fever is being tested.

NEW YORK

Personal.—Dr. Thomas Parran Jr., Albany, state health officer, received the honorary degree of doctor of laws at the hundredth anniversary of Syracuse University School of Medicine, June 4.——Fred R. Griffith Jr., Ph.D., professor of physiology at the University of Buffalo School of Medicine, has been appointed head of the department to succeed Frank A. Hartman, Ph.D., who recently resigned to go to Ohio State University College of Medicine.

Hospital Superintendent Appointed.—Drs. Noah Stanley Lincoln and Ralph Horton of the staff of the division of tuberculosis, state department of health, have been provisionally appointed superintendents of two of the new state tuberculosis hospitals now under construction. Dr. Lincoln will have charge of the Hermann M. Biggs Memorial Hospital at Ithaca, and Dr. Horton of the new hospital at Oneonta. Drs. Edmund H. Kerper, Loomis, and Aloysius D. Maby, Albany, have been provisionally appointed to succeed Drs. Lincoln and Horton in the state health department.

New York City

Changes at Rockefeller Institute.—Dr. Warfield T. Longcope, Baltimore, has been elected a member of the board of scientific directors of the Rockefeller Institute for Medical Research to succeed Dr. William H. Welch. Dr. Leslie T. Webster has been promoted to membership in the institute; Dr. Richard E. Shope, to associate member; Dr. Francisco Duran-Reynals, Kenneth Goodner, Ph.D., and Geoffrey W. Rake, to associate, and Kenneth S. Chester, Ph.D.; Erich Traub, V.M.D., and Philip R. White, Ph.D., to assistant. Max Bergmann, Ph.D., has been appointed associate member. The following new assistants have also been appointed:

Donald C. Boughton, Ph.D.
Dr. James R. Dawson Jr.
Dr. Delavan V. Holman
Dr. Colin M. MacLeod
Mr. William F. Ross
Carl V. Smythe, Ph.D.
Jack Compton, Ph.D.
Dr. Lee E. Farr
Dr. John G. Kidd
Dr. Thomas F. M. Scott
Dr. Joseph E. Smadel

The following were appointed fellows:

Bacon F. Chow, Ph.D.
George I. Lavin, Ph.D.
William Trager, Ph.D.
Joseph F. Fruton, Ph.D.
Dr. Charles V. Seastone Jr.

NORTH CAROLINA

Changes in Health Department Staff. — Dr. Joseph C. Knox, assistant epidemiologist of the state board of health, Raleigh, has been appointed epidemiologist, succeeding Dr. Daniel F. Milam, who has been transferred to Panama by the International Health Board of the Rockefeller Foundation. He was assigned as consulting epidemiologist to North Carolina two years ago. Dr. Robert E. Fox, formerly health officer of Buncombe County, has been made assistant director of county health work.

Society News.—Drs. Austin I. Dodson, Richmond, and Adolph Rumreich, Washington, D. C., addressed the summer meeting of the Third District Medical Society at Southport, July 27, on "Management of Prostatic Obstruction" and "Spotted Fever—Eastern Type and Typhus Fever," respectively. —— Dr. Sylvia Allen, Charlotte, addressed the York County Medical Society, Rock Hill, July 27, on epilepsy.—— Dr. Ernest O. Swartz, Cincinnati, addressed the Buncombe County Medical Society, Asheville, July 14, on "Carbuncle of the Kidney."

OHIO

Radium Stolen. — Dr. Edward O. Bauer, Middletown, reported to police, August 1, that a package of radium valued at $3,500 had been stolen from his automobile. Another package containing $5,000 worth of radium was not disturbed, he said. The radium was the property of Dr. Mabel E. Gardner, Middletown.

Personal. — Dr. Anthony R. Grierson, Sandusky, recently passed the state bar examination.——Dr. Frank R. Dew, Barnesville, has been appointed health officer of Lorain County, with headquarters at Oberlin.——Dr. Wilbert A. Hobbs, East Liverpool, was the guest of honor at a reception given by the Kiwanis Club of East Liverpool, July 19, celebrating his fiftieth anniversary in the practice of medicine.

PENNSYLVANIA

Society News.—The Westmoreland County Medical Society held its annual welfare meeting at the Torrance State Hospital, August 16. A symposium on psychiatric problems in the community was presented by Dr. Josephine Funderburgh, Mr. E. M. L. Burchard, staff psychologist, and Miss Ray Blight, staff social worker; Dr. John I. Wiseman, Mayview, clinical director, spoke on "Hereditary and Environmental Factors in Mental Disease" and Miss Prudence Matter, staff dietitian, on "Food Problems in a Mental Hospital." —— Dr. William S. Wheeling, Windber, addressed the Cambria County Medical Society, Johnstown, August 9, on "Medical Economics and Medical Ethics in Their Relation to the Modern Hospital." Dr. Olin G. A. Barker, Johnstown, showed motion pictures of Mexico and Yucatan.

Regional Cancer Conference.—The cancer commission of the Medical Society of the State of Pennsylvania sponsored a regional meeting in Sayre, August 13. Speakers at the scientific session were:

Dr. Samuel J. Waterworth, Clearfield, Relation of Trauma to Cutaneous Malignancy.
Dr. Lyndon H. Landon, Pittsburgh, Relation of Trauma of the Osseous System.
Dr. Stanley P. Reimann, Philadelphia, Biologic Work on Growths.
Dr. William Wayne Babcock, Philadelphia, Breast Conditions and Their Relation to Malignancy.
Dr. Charles C. Norris, Philadelphia, Significance of Menopausal Hemorrhage with Especial Reference to Carcinoma.
Dr. Fred W. Rankin, Lexington, Ky., Carcinoma of the Colon.
Dr. Elmer Hess, Erie, Tumors of the Bladder.

Drs. Robert B. Greenough, Boston, and Dean Lewis, Baltimore, addressed a public meeting in the evening. Dr. Jonathan M. Wainwright, Scranton, chairman of the cancer commission, who was to have appeared on the program, died August 3.

Philadelphia

Survey of Outpatients.—The Philadelphia County Medical Society recently sponsored a study of hospital outpatient departments, which was carried out in cooperation with the Joint Committee on Research of the Community Council of Philadelphia and the Pennsylvania School of Social Work. Nineteen hospitals furnished information concerning 1,036 patients. The questions to which answers were sought were as follows:

1. Do the outpatient departments of hospitals waste their resources in duplication of examination and treatment of patients who are merely "shopping around"?
2. Are the outpatient departments accepting patients who could afford to pay private physicians?
3. Could a medical registration bureau be made to pay for itself out of the savings in money which might be effected by elimination through clearing the names of patients and recording their financial status?

The survey showed that 272 patients, about one in every four of those investigated, were known to two or more hospitals. A special study of 104 of these showed that thirty-nine changed hospitals because they were dissatisfied with treatment; fifty-five for other reasons, such as moving from one district to another; in ten cases the reports were inadequate. Only about 5 per cent were considered "chronic shoppers." Of the 272 duplicating patients, less than 5 per cent were found to be able to pay any part of their expenses for medical care: 170 were on relief, 25 were dependent on relatives and friends, 47 had incomes insufficient to provide for medical care, 13 were considered able to pay reasonable charges, and in 17 cases the economic situation was not reported. Concerning the 764 patients whose names were found in only one hospital, it was ascertained only that they were costly patients to some hospital and that the proportion of them known to relief agencies (62.6 per cent) was almost identical with the rate among the 272 who were studied in detail (62.5 per cent). From this it was inferred that the economic status was in general the same in the two groups. The evidence gathered in this study indicated that the majority of these clinic patients had formerly been under the care of private physicians, whom they left when they felt they were unable to pay. The question concerning the establishment of a medical registration bureau could not be answered, the investigators declared. This phase of the study was not brought to a satisfactory conclusion chiefly because the hospital records and the hospital accounting methods were not adapted to supplying answers needed. There were no comparable data among the hospitals on costs of treatment to these patients, the report said; therefore it was impossible to determine the costs of the duplications and there could be no definite answer to the possibility of financing a registration bureau out of savings.

SOUTH CAROLINA

Hookworm Survey.—The state department of health will begin a survey of hookworm in the state September 1, under the direction of Dr. James A. Hayne, state health officer, and Dr. Benjamin F. Wyman, Columbia, director of rural sanitation, newspapers report. Dr. Alvin E. Keller, professor of preventive medicine and public health, Vanderbilt University Medical School, Nashville, Tenn., will assist in the survey and corrective campaign. Every county in which the disease is prevalent will be visited and the results checked with a survey made by the Rockefeller Foundation in 1914.

WISCONSIN

Subsidiary Board of Examiners.—The National Board of Medical Examiners recently organized a subsidiary board for part III, with Drs. J. Gurney Taylor and Hjorleifur T. Kristjanson, Milwaukee, as chairman and secretary, respectively.

State Medical Meeting at Green Bay.—The ninety-third annual session of the State Medical Society of Wisconsin will be held in Green Bay, September 12-14. General meetings will be held each afternoon and the mornings will be occupied by dry clinics given by Green Bay physicians, clinical demonstrations and section meetings. Guest speakers will include:

Dr. James M. Hayes, Minneapolis, Prevention and Treatment of Complications Following Cholecystectomy.
Dr. Gilbert J. Thomas, Minneapolis, Tuberculous Disease of the Kidney.
Dr. Herman L. Kretschmer, Chicago, Prostatic Resection.
Dr. Fred Jenner Hodges, Ann Arbor, Mich., Diseases of the Colon.
Dr. Leo G. Rigler, Minneapolis, Early Diagnosis of Carcinoma of the Stomach.
Dr. Arthur W. Erskine, Cedar Rapids, Iowa, Carcinoma of the Breast.
Dr. Harry E. Mock, Chicago, Skull Fractures.
Dr. Loyal Davis, Chicago, Surgical Treatment of Trigeminal Neuralgia.
Dr. Herbert Z. Giffin, Rochester, Summary of the Causes of Anemia, with Fundamentals Concerning Treatment.
Dr. Owen H. Wangensteen, Minneapolis, Diagnosis and Treatment of Acute Intestinal Obstruction.
Dr. Ellis Fischel, St. Louis, Everyday Problems in the Diagnosis and Treatment of Cancer.
Dr. Robert S. Dinsmore Jr., Cleveland, Surgical Problems Associated with Cholelithiasis.
Dr. George B. Eusterman, Rochester, Minn., Management of Gastric Lesions.
Dr. Edwin W. Ryerson, Chicago, Lesions of the Knee Joint.
Dr. Dean Lewis, Baltimore, Difficulties in the Diagnosis of Tumors.
Dr. Albert H. Montgomery, Chicago, Congenital Anomalies of the Gastro-Intestinal Tract.
Dr. W. Russell MacAusland, Boston, Present Status of Arthroplasty in Ankylosed Joints.
Dr. Edward Starr Judd, Rochester, Minn., Prevention of Surgical Complication.

At the annual dinner Thursday evening at the Northland Hotel Drs. Lewis, Past President, and Olin West, Chicago, Secretary of the American Medical Association, will be the speakers. The annual golf tournament will be held Tuesday, September 11, at the Oneida Golf Club.

GENERAL

Society News. — The thirty-eighth annual conference of Dairy, Food and Drug Officials of the United States will be held, October 15-18.——The American Hospital Association will hold its annual meeting in Philadelphia, September 24-28.

Unauthorized Solicitor.—A physician of Logan County, Ill., reports that one A. A. Kennedy is visiting physicians and clergymen claiming to represent the P. F. Collier Distributing Corporation, Louisville, Ky., and that he collects $10 deposits on orders for an encyclopedia. This firm states that the man was in its employ until May 1934 but now has no connection with it.

Automobile Fatalities in Four Weeks.—The bureau of the census, U. S. Department of Commerce, announced that eighty-six large cities in the United States reported 609 deaths from automobile accidents for the four weeks ended August 4, as compared with 601 deaths during the week ended Aug. 5, 1933. Of the total number, 433 occurred within the corporate limits of cities. For the fifty-two week periods ended Aug. 4, 1934, and Aug. 5, 1933, the totals for all cities were respectively 8,706 and 7,880, which indicate a recent rate of 23.3 per hundred thousand of population as against an earlier rate of 21.1.

Bequests and Donations.—The following bequests and donations have been announced recently:

Bryn Mawr Hospital, Bryn Mawr, Pa., a provisional bequest of $20,000 from the will of Ellen W. Longstreth.

Caledonia Hospital, Brooklyn, $10,000 and half the residue of the estate valued at $138,776 contingent on the death of two beneficiaries, by the will of Donald G. C. Sinclair.

Presbyterian and St. Luke's hospitals, New York, $5,000 each by the will of Mrs. Florence Coe Stewart.

Charles T. Miller Hospital, St. Paul, $20,000 by the will of the late George H. Prince, and an anonymous donation of $5,000 toward its free bed fund.

New York Orthopedic Hospital, $10,000 by the will of the late Mrs. Elizabeth Mills Reid.

St. Raphael's Hospital, New Haven, Conn., $10,000 to found the Alice Derby Lang Fund, from the will of the late Prof. Henry R. Lang.

Changes in Status of Licensure.—The State Medical Board of Ohio reports the following action taken at its regular meeting in Columbus, July 12:

License of Dr. Ruth Cassel Schweisberger, Canton, revoked following her conviction on a charge of criminal abortion. She is confined at the Marysville Reformatory for Women.

The State Board of Health of Missouri reports the following action:

The license of Dr. Clarence Alexander Wright to practice medicine in Missouri was revoked May 23 following his conviction on a charge of performing an illegal operation.

The Missouri license of Dr. Joseph Moreau Blakemore, at one time of Chicago, was revoked May 23 by reason of the fact that his Illinois license had been revoked for professional connection with an unlicensed person. The Illinois revocation took place March 8, 1933.

The New York State Board of Medical Examiners reports:

The license of Dr. Louis Henry Pinco, Yonkers, which was suspended April 20, 1933, was restored April 20.

Fraudulent Solicitor.—It has been reported that a man giving the name R. E. Ovens has been calling on hospital executives in Wisconsin claiming to represent THE JOURNAL, *Hospital Management* and "American and Canadian Hospitals," a directory published by the Midwest Publishers Company, Minneapolis. The hospital journal reports that the man is not known in that office. The Midwest Publishers Company writes that on July 19 a Mr. R. E. Ovens appeared at that office, saying that he represented THE JOURNAL and *Hospital Management* and requesting that he be allowed to represent also "American and Canadian Hospitals." On the strength of these apparent connections, the man was allowed to take a copy of the latter publication for examination and was instructed to return later in the week. He did not return and the only address he gave was the Morrison Hotel, Chicago. It was said that he made an excellent appearance, was about 6 feet tall, and was slender and of medium coloring. He does not represent THE JOURNAL.

CANADA

Personal.—Dr. Wilder G. Penfield, clinical professor of neurological surgery, McGill University Faculty of Medicine, Montreal, received a ceremonial chalice at the twenty-first reunion of the class of 1913 of Princeton University, Princeton, N. J., June 15. The chalice has been dedicated by the class to commemorate outstanding accomplishments of its members and will be retained by Dr. Penfield until another award is made.——Dr. Robert A. H. MacKeen, assistant professor of pathology and bacteriology, Dalhousie University Faculty of Medicine, Halifax, Nova Scotia, and assistant pathologist for the province, has been appointed director of the bureau of laboratories of New Brunswick to succeed the late Dr. Harry L. Abramson. —— Dr. Charles Ferdinand Martin, dean of McGill University Faculty of Medicine, Montreal, was awarded the honorary degree of doctor of laws by Harvard University at its recent commencement.

Society News.—Dr. Daniel S. Macnab, Calgary, was elected president of the Alberta Medical Association at the annual meeting in Calgary, June 22.——Dr. Donald C. Malcolm, St. John, was elected president of the New Brunswick Medical Society at the annual meeting in Woodstock, July 10-11. Among speakers were Drs. Frederic J. Cotton, Boston, on treatment of fractures and Rafe Nelson Hatt, Springfield, Mass., on diseases and injuries to the hip joint.——At the annual meeting of the Prince Edward Island Medical Association in Summerside, July 13, guest speakers were Drs. Jonathan C. Meakins and Dudley E. Ross, Montreal, on anemias and cleft palate, respectively. Dr. Victor L. Goodwill, Charlottetown, was elected president.——Dr. J. Preston Maxwell, professor of obstetrics and gynecology, Peiping Union Medical College, Peiping, China, addressed the Medical Arts Club of Winnipeg, July 13-17, on "Osteomalacia and Adult and Fetal Rickets."

FOREIGN

Personal. — Prof. Bernhard Zondek, former head of the gynecologic department of the Charity Hospital in Berlin, has been appointed to direct the obstetric and gynecologic departments of the Hadassah-Rothschild Hospital in Jerusalem.

International Congress on Tropical Medicine. — The ninth international congress of the Far Eastern Association of Tropical Medicine will be held in Nanking, China, October 1-7. This congress was originally set for October 1933. Official languages of the congress are English, French and German. Various sections will hold meetings on many aspects of tropical disease, with special attention to cholera, leprosy, yellow fever, plague and malaria. Section meetings will be held in the mornings and two afternoons, and the remainder of the afternoons will be devoted to visits to institutions. Information may be obtained from the secretary, Dr. P. Z. King, Wei Sheng Shu, Nanking.

Government Services

Sixth Annual Medicomilitary Symposium

The sixth annual inactive duty training course for medical reserve officers of the army and navy will be held at the Mayo Clinic, Rochester, Minn., October 7-20. Morning hours will be devoted to clinics on subjects selected by the student officers and afternoons to medicomilitary subjects. The general subject will be "Public Health and Its Relation to National Defense." The program will be under the direction of Col. Kent Nelson, U. S. Army, Seventh Corps Area Surgeon, Omaha, and Capt. John B. Mears, U. S. Navy District Medical Officer, Ninth Naval District, Great Lakes, Ill., to either of whom application may be made. One hundred hours of credit will be given for the course; those who cannot remain for the entire time may join or leave at any time and will receive credit for the hours spent.

Mislabeled Beer to Be Seized

Beer so labeled as to lead buyers to believe that it has an unusually high alcoholic content will be seized and prosecution of the brewers will be started whenever such a product is found in interstate commerce, it was announced July 14. A brewery that makes a nationally distributed beer complained to the Food and Drug Administration that a New Orleans brewer has labeled beer that contains less than 4 per cent of alcohol in this manner: "Does not contain more than 6 per cent of alcohol by volume," with the 6 per cent printed in large numerals. The administration pointed out that while it does not require a statement of alcoholic content on foods and beverages, it does require that food, including beer, shall not be labeled with any statement, design or device that is misleading in any way. Action has already been taken against a number of beers bearing misleading or ambiguous statements of alcoholic content, it was said. Cases were cited in which the alcoholic content was expressed in the form of degrees proof, such as "12 proof" with the figure 12 in large type and the word "proof" in inconspicuous letters. Few purchasers know that the percentage of alcohol by volume is only half the degrees proof, even if they notice the small and inconspicuous word "proof," it was said.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 28, 1934.

Annual Meeting of British Medical Association

Two thousand physicians attended the one hundred and second annual meeting of the British Medical Association, which was held at Bournemouth. At the representative meeting a number of important medicopolitical subjects were discussed.

RESEARCH SCHOLARSHIPS AND GRANTS

Sir Ewen J. Maclean proposed an increase in the amount allocated to research scholarships and grants. A powerful, rich association, such as theirs, was giving only $5,000 a year for research. Much money was wasted under the blessed name of research but there was no waste of the money devoted by the association to research. The treasurer, Mr. N. Bishop Harman, said that the income of the association was $780,000, and careful analysis showed that the items of expenditure that could legitimately be regarded as expended directly in the advancement of science totaled $350,000. While sympathizing with the motion, he pointed out that, with the government grants and so many associations willing, in some cases too willing, to give money for research, it was not necessary for the association to go further. It was far better to disseminate the knowledge of medical science among its members. The motion was defeated.

MEDICAL EDUCATION

Sir Henry Britten Brackenbury, chairman of the Committee on Medical Education, presented for approval a report that had previously been circulated. Its main provisions were that the opportunity had arisen and should be taken advantage of to raise the general standard of education and the standard of scientific education for those about to enter the medical profession; that the course of the curriculum should be considered as a whole; that there should be no isolated departments acting separately from one another but that the whole course of instruction should be coordinated, first, in emphasizing the preventive aspects of medicine and, secondly, in emphasizing that the human personality is a whole and that attention should be paid not merely to a disease process going on inside the human body as a vehicle but to a human person who desired to be made well; and that in the latter part of the curriculum there should be a period when the student, before he started out as a registered physician, should be given as much responsibility as possible under supervision. An amendment to qualify the recommendation by deleting any reference to general approval, so that the resolution simply read that the report be sent to the various bodies mentioned, was carried.

OVERCROWDING OF THE PROFESSION

Dr. Arnold Gregory moved the raising of the age of registration of medical students to 18 years, a point on which the teaching profession was unanimous. At present the average student was too young and immature and his general education had not reached the standard to enable him to obtain full benefit from his medical education. Further, the rise in the general standard of education among the general population since the war called for a higher standard in those entering medicine. The number of students was growing steadily year by year and now taxed the capacities of the schools. Further, the profession had reached the saturation point and, as in all civilized countries, the time had come to limit its numbers. At the end of 1932 there were more than 56,000 names on the Medical Register, 10,000 more than in 1922 and 19,000 more than in 1902. The population had not increased in anything like the same proportion. Considerable sympathy was expressed with the resolution, but technical objections were raised and it was withdrawn.

RECOGNITION OF CHIROPODISTS DEFEATED

A recommendation of the council was presented that the medical profession should accord a measure of recognition to approved chiropodists who accept the definition of their work that "chiropody means the treatment of abnormal nails and all superficial excrescences occurring on the feet, such as corns, warts, callosities and bunions," and who undertake to confine their practice to this field and not even within it to operate on any congenital or acquired deformity, any condition requiring a general anesthetic, or any condition involving any structure below the level of the true skin, or to treat any patient under the care of a physician without his knowledge and consent. Dr. Langdon-Down, who moved the resolution, described chiropodists as an ancient confraternity giving a service accepted (if silently) by the medical profession and appreciated by the public. Their restricted field was not cultivated by the profession. Of recent years the public had tended more and more to resort to chiropodists, whose methods had developed, and institutions, such as foot hospitals and foot clinics, were being widely established. Associated with this was extension of the courses of training, in which the medical profession had assisted. If the profession stood aloof it would lose the power of directing and limiting the development of this speciality. Dr. C. O. Hawthorne opposed the motion. Chiropody was either an esthetic enterprise or a therapeutic measure. If the former, the medical profession had no more concern with it than with manicure or hair dressing; if the latter, diagnosis must precede treatment, and the minimum training for diagnosis was the medical curriculum. The medical profession should not associate itself in any way with a group of unqualified practitioners. This implied no animosity on the part of the profession but only that the responsibility of taking such advice rested on the patient. The Council's recommendation was rejected by 102 votes to 65.

Cooperation Between Medical Schools and Municipal Hospitals

The municipal hospitals are now equipped on the most modern lines and have a part time staff of consultants drawn from the voluntary hospitals. Plans for a still greater cooperation have now been arranged. The medical schools of London number twelve and have grown rapidly in the least 150 years. They originated in a system of apprenticeship, under which the students became apprentices to the individual members of the staffs. Later this system was terminated and the modern medical schools were established. Early in the present century these schools became constituent colleges of the London University. The range of medical education has now become so wide and the subjects of training for a physician so complex that the problems of teaching are becoming more and more difficult. To meet this difficulty, cooperation with the municipal hospitals has been arranged. An executive council consisting of the dean and four members of the teaching staff of each school has been formed and subjects of educational importance will be discussed throughout the year. Certain courses of study are being organized for which it is difficult to cater in an individual medical school but which can be arranged without difficulty for the students of more than one school. The students of each school will be permitted under an arranged scheme to avail themselves of the clinical facilities of other schools. In order to allow the scheme to develop gradually, the arrangements for an interchange of clinical teaching will be confined at first to St. Bartholomew's and St. Thomas's hospitals. After the preliminary experience, when the organiza-

tion has become stabilized, similar facilities will be extended to Guy's. It is hoped that this cooperation will be of great benefit to medical education. Under arrangements now made between the London Voluntary Hospitals Committee and the Hospitals and Medical Services Committee of the London County Council, each medical school is linked with a municipal hospital in its neighborhood. The arrangements provide for clinical demonstrations at the linked hospitals. Special facilities have been provided for instruction in obstetrics. Students of voluntary hospitals are now enabled to reside for a fortnight at municipal hospitals, during which approximately ten cases are allotted to each. It is thought that sooner or later there must be closer approximation of the two classes of hospital, so as to make the best use of the 96,000 beds now available in London.

Memorial to Sir Robert Jones

An appeal for a national memorial to Sir Robert Jones, who is claimed to be "the creator of modern orthopedic surgery," was made at the Mansion House under the presidency of the lord mayor of London. It is proposed that the memorial shall comprise a Robert Jones professorship in the Royal College of Surgeons, a Robert Jones traveling fellowship, to be awarded alternately by the Royal College of Surgeons and the University of Liverpool (the city in which Jones practiced) and the Liverpool Medical Institution. Rudyard Kipling, who was to have spoken, was unavoidably prevented from attending. Lord Moynihan said that the gifts of Robert Jones to the science and art of surgery had rendered his name immortal. Immortality attached only to the things of the spirit, and it was the gifts of Robert Jones to the spirit of surgery that the memorial was designed to commemorate. He was one of the two great scientific heroes of the war, and it was the baldest truth to say that hundreds of thousands of men owed not only their recovery but their restitution to physical health directly to his skill. But the great thing about a surgeon was not his immediate work but the lessons that he gave, the craft that he taught, the spirit that he inspired in those who came after. The lessons taught by Jones throughout the war were now part of the heritage of surgeons throughout the world. In the name of his colleagues across the Atlantic, Lord Moynihan could say that they would ever bear the name of Jones in proudest remembrance.

PARIS

(From Our Regular Correspondent)

July 4, 1934.

Local Anesthesia Applied to the Stellate Ganglion

Professor Leriche of Strasbourg has just completed a research on the effects of anesthesia applied directly to the stellate ganglion. The patient is placed on a horizontal table with pillow under the neck and the head turned away from the operator. Starting with the middle of the clavicle, the upper margin of that bone is shaven and a pliable platinum needle, from 8 to 10 cm. in length and 0.6 mm. in diameter, is inserted in the direction of the transverse process of the seventh cervical vertebra. Contact with the bone having been obtained, a double movement is given to the needle. The large end of the needle is raised so that the point drops down the width of one vertebra, while, at the same time, the needle is directed 30 degrees outward. At this moment the needle is in contact with the stellate ganglion. The injection of 10 cc. of procaine hydrochloride (1 per cent solution) is sufficient to induce anesthesia of the ganglion. Technical errors would consist in puncturing the subclavian or the vertebral artery or in penetrating the cerebral space. That would cause no great harm, and the error would be evidenced by the passage of a drop of blood or of cerebrospinal fluid through the needle after its introduction. The danger of wounding the apex of a lung is more serious, for then pneumothorax would follow. The injection is followed immediately by a marked facial vasodilatation, but this lasts only a few minutes. This method is useful in diagnosis and treatment. If one is planning to extirpate the stellate ganglion in treating angina pectoris or asthma, and this anesthesia effects no improvement, even momentary, this is evidence that it is of no use to extirpate the ganglion. If, however, a good result is secured, this indicates that the operation will offer good chances of recovery. Leriche has observed several cases of asthma in which anesthesia of the stellate ganglion brought about improvement, and in some cases several repetitions of this anesthesia brought about a consistent recovery after a few days of treatment. Excellent results were secured in allaying pain in the stump following amputations of the arm. There is an advantage in combining therewith anesthesia of the second thoracic ganglion by the dorsal route. A curious feature is that, in algias of the arm, one secures permanent effects although the action of the anesthetic may be only momentary. Leriche declares that, while the fact cannot be questioned, the mechanism is difficult to explain.

Retarded Contractions of the Iris in Mental Patients

Mr. André Barré, physician of the urologic clinic of the Hôpital de la Salpêtrière, has announced a clinical sign that, he contends, aids in the diagnosis and the prognosis of various mental disorders. The sign consists in noting slight contractions in the iris, at the end of several moments of observation. In a normal person these slight oscillations of the margin of the iris are seen at the end of from ten to sixteen seconds (sometimes thirty seconds) in aged persons or in persons presenting natural mydriasis. When the oscillations begin to manifest themselves, there are usually from twelve to nineteen in two minutes, with an average of fourteen, this figure being never lower nor higher in a subject who is entirely normal. The manifestation that indicates serious mental disorder lies in the slowness with which these oscillations begin and in the reduction of their number—which may end in their complete suppression. It appears that the figures given for a normal subject correspond to a normal and well balanced mental activity. Barré has applied this method of examination to a large number of different mental states. In idiots the oscillations, as a rule, do not exist, even after a prolonged period of observation. The exceptions are rare. In imbecility there is a marked retardation for the onset of the contractions of the iris, a retardation exceeding a minute and a half and sometimes going to three minutes. As to the number of oscillations that may be counted in two minutes, they are not only very weak but also wide apart—about four on an average. In states of mental debility, the contractions of the iris do not begin until after one minute and sometimes more than two minutes. Moreover (an important fact), the subjects in whom the retardation was the most marked were those who, at the start, presented simple weakness but who developed later definitive types of dementia. This sign appears to have, therefore, considerable prognostic value. The author, after observations made on aged persons of the same age, who were normal, concluded that the sign is independent of age and may be elicited only in case of dementia. In cases of dementia praecox, hebephrenia, catatonia and schizophrenia, one observes without exception retardation of the contractions of the iris. The interval is never less than thirty-five seconds and may reach three to five minutes or even longer. The contractions may be entirely absent. These contractions, when they exist, are extremely weak and wide apart —of a trembling nature and scarcely perceptible. The retardation appears to be proportioned to the gravity of the mental state. Remissions and ameliorations are associated with any return of the contractions of the iris to a normal state. Hallucinatory and convulsive states furnished similar results. In

melancholia there is a definite relation between the indications furnished by this symptom and the mental state of the subject —the symptom improves parallel with any improvement in the mental state. In dementia paralytica, in addition to the usual signs supplied by an examination of the accommodation of the pupil, the iris is absolutely motionless. The author wisely says that this sign must not be regarded as pathognomonic and one that will be of great aid in psychiatric diagnosis; for is is observed in widely different conditions and, exceptionally, it may give false information. Nevertheless, he emphasizes the prognostic value of the sign. It may furnish valuable information on the chances of amelioration or aggravation of the patient's condition, aside from the confirmation of a purely psychiatric order.

BERLIN

(From Our Regular Correspondent)

July 2, 1934.

Number of Physicians in German Cities

The statistical department of the German Medical Organization has just published a report on the distribution of practicing physicians throughout the cities of Germany, and some of the details follow.

Classified Cities	Total Population of Group	Number of Practicing Physicians	General Practitioners	Specialists	Percentage of Specialists
1. 52 large cities (more than 100,000 pop.)	19,782,000	18,007	9,610	8,397	46.6
2. 49 cities (50,000-100,000 pop.)	3,578,300	2,902	1,432	1,470	50.7
3. 158 cities (20,000-50,000 pop.)	4,805,600	3,725	1,993	1,732	46.5
4. 270 cities (10,000-20,000 pop.)	3,589,900	2,469	1,740	729	29.5
Totals: 529 cities	31,755,800	27,103	14,775	12,328	45.5

Of the 39,000 practicing physicians in Germany, there are more than 27,000 in the cities with more than 10,000 population. It is evident that 48.7 per cent of the total population of Germany has 59.5 per cent of the practicing physicians.

Comparing this with the last census of the kind, taken in 1932 (THE JOURNAL, July 8, 1933, p. 152), it will be seen that scarcely any shifting has occurred in the relation between the number of physicians and the number of cities comprised in the four groups, although there are 700 fewer physicians in these groups, which is doubtless due to recent political regulations.

The first group (large cities), with 30.3 per cent of the total population, comprises 46.2 per cent of the total number of practitioners. Of these 18,000 physicians, only 13,355 have been admitted to panel practice.

Scrutiny of the table leads to the conclusion that the hesitation about settling in rural districts is gradually disappearing. In 529 cities the number of specialists, as compared with 1932, has decreased by 144, although, considering the percentages, there are no essential differences in the various groups of specialists as against 1932. The number of gynecologists, internists, orthopedists and roentgenologists has increased slightly, while the representation in the other groups of specialists has declined somewhat. The percentage of gynecologists falls rapidly with the relative size of the various groups of cities, there being 12.9 per cent in group 1, as compared with 8.0 per cent in group 4. On the other hand, the percentage of specialists in surgery and diseases of women rises from group 1 up to group 4 (2.4, 4.8, 7.4 and 17.0 per cent). The dermatologists show a decline: from 15.6 per cent in group 1 to 5.6 per cent in group 4. The internists show no marked decrease until the smaller cities are reached. The percentages for groups 1 to 4 are 15.7, 15.6, 16.2 and 11.9. In the cities of groups 1 and 2 the internists have the strongest representation among the specialists. The distribution of the pediatricians is similar, although they have the strongest representation in group 3. Among the ophthalmologists and the otorhinolaryngologists the usual observation is made that the representation is strongest in the smallest towns.

The panel physicians (kassenärzte) show an increase of 677 in the 529 cities included in this survey, whereas the number of physicians permanently located shows a decline of 742, although it should be mentioned that the number of cities surveyed is somewhat larger than in 1932. At that time the total number of panel physicians in the whole reich was 32,000; the number today is 31,847. In spite of the preference shown physicians who took part in the war, the total number of panel physicians has not increased, because about 1,500 non-Aryans and communists have been excluded from panel practice. Of the 31,847 panel physicians now enrolled, 21,091 are located in the 529 cities, with the following distribution: group 1, 13,355 panel physicians, 47.3 per cent of whom are specialists; group 2, 2,316, 48.4 per cent specialists; group 3, 3,166, 44.4 per cent specialists, and group 4, 2,254, 28.1 per cent specialists.

The "large cities" claim 41.7 of the total number of panel physicians. The percentage of specialists is somewhat smaller among the panel physicians than among the physicians settled in a permanent abode (44.9 as against 45.5 per cent). The highest percentage is found among the otorhinolaryngologists, neurologists, ophthalmologists, dermatologists and gynecologists, the percentage having risen in a number of the specialties; for example, as to the gynecologists, internists, neurologists, pediatricians, orthopedists and roentgenologists. Of the additional 677 panel physicians, 588 are specialists and only 89 are general practitioners. In the distribution of the specialists among the panel physicians according to city groups, the same observations may be made as among the specialists in general.

Convalescents' Serum in Acute Anterior Poliomyelitis

In an article in the *Klinische Wochenschrift*, Schlossberger and Krumeich of the federal bureau of health state that it was eminently desirable that observations on the effects of administering convalescents' serum in poliomyelitis be collected. The outbreak of 1932 offered such an opportunity, particularly as special arrangements were perfected for the preparation of canvalescents' serum (THE JOURNAL, Oct. 21, 1933, p. 1327). To secure a survey of the results, a special session of the federal health council, to which numerous experts were summoned, was called. In addition, the federal bureau of health sent questionnaires to all physicians and hospitals that had ordered convalescents' serum. Exact clinical reports on 227 cases were received. Patients with uncertain diagnosis were excluded. Of these 227 patients, twenty-six were given the serum in the preparalytic stage and 201 after the appearance of paralysis. In the twenty-six patients, a complete cure of the disease without paralysis was effected. There were no deaths, although in two patients of this group paralysis developed later. In contrast with the results just mentioned, the disease proved fatal in twenty-five of the 201 patients of the second group. According to the observations of the attending physicians, in 148 of these 201 patients the administration of serum had no influence on the paralysis, while in the remaining twenty-eight cases there was a pronounced retrogression of the paralysis. But since such improvement was observable with about the same frequency also in untreated patients, no special importance can be attached to these observations. The view expressed by many other physicians must be endorsed; namely, that convalescents' serum will not bring about a retrogression of paralysis once it has developed. Since the

number of patients who died, although treated in the paralytic stage with convalescents' serum, corresponded closely with the mortality that prevailed in 1932, it does not seem likely that the administration of the serum after the onset of paralysis exerted any harmful effect. The conclusion is, therefore, that convalescents' serum may be injected after the onset of the paralytic stage with a view to checking, if possible, the progress of paralysis.

Although the number of patients in Germany treated with convalescents' serum in the preparalytic stage is too small to justify a final opinion, the observations made thus far seem to show that this therapeutic measure has proved its high value. Great care must be taken therefore, by the creation of a suitable organization, that cases of poliomyelitis are recognized promptly and that serum treatment is instituted in season.

Decline of Infant Mortality

In 1933, infant mortality showed a decline. There were 45,279 deaths of children during the first year of life, as compared with 47,948 deaths in 1932 and 53,177 deaths in 1931. In 1933 there were 76 deaths per thousand, as against 80 in 1932, 84 in 1931, 104 in 1925 and 150 in 1913. Nevertheless the excess of births over deaths for Prussia in 1933 was only 144,022, which is 34,566 fewer than in 1932 and 49,880 fewer than in 1931. The excess of births over deaths amounted in 1933 to 3.5 per thousand of population, as against 4.5 in 1932 and 4.9 per thousand in 1931. In 1925 the excess of births over deaths was 9.1 per thousand, and in 1913 13.3 per thousand of population.

The Detection of Tuberculous Persons

According to the statements of Dr. Hoth, about one fifth of all recognized cases of open pulmonary tuberculosis and more than half of the cases of closed pulmonary tuberculosis in Bremen were detected by the tuberculosis consultation center. Among these patients who were first discovered by the care-taking center there were comparatively more cases of recent origin than among the patients notified to the care-taking center from outside sources of information. It has been the experience of the Bremen care-taking center that not only the initial examination of the entourage of patients with open tuberculosis but also the continued observation of persons found on the first examination to be uninfected led to the detection of a considerable number of patients with lung involvement. It has been shown that in Bremen, through the continued observation of healthy persons, just as many cases of open and of closed tuberculosis have been discovered as with the aid of the most successful serial examinations.

Protein Requirements

From numerous experiments on nitrogen balance and from the study of freely chosen protein-rich and protein-poor diets, Dr. W. Heupke of Frankfort-on-Main has drawn the following conclusions: In most diets the protein minimum lies between 30 and 40 Gm. Hundreds of millions of human beings cover their protein requirements by the ingestion of a protein intake ranging between 50 and 70 Gm., which conserves bodily performance. Hence a protein intake of 80 Gm. must be regarded as amply sufficient. No disorders can be mentioned that are known with certainty to be due solely to a low protein intake. There are no diets freely chosen, and made up with any degree of reason, in which the protein intake was below the minimum requirements. The notion of a protein optimum appears superfluous, as dietitians are not in a position to assume that a certain number of grams of protein constitutes the most suitable intake. There is a wide range between an adequate protein intake and an excessive protein intake. In a short range of observation no injuries to health can be shown to be caused by the ingestion of an excessively large protein intake, but a long range of observation furnishes evidence that an unduly large protein intake should be avoided, since modern research has shown that a high protein intake continued over a long period may give rise to disorders.

BUDAPEST

(From Our Regular Correspondent)

July 23, 1934.

The Medical Congress at Balatonfüred

The Congress of Internists was held at Balatonfüred, a watering place on the shores of Lake Balaton. It was attended by a great number of physicians. The congress continued for five days and then the members went on excursions on the lake, which is fringed with resorts in glorious scenic settings.

TONSIL OPERATIONS ON CARDIAC PATIENTS

Dr. Vidor Zimányi said that tonsil operations performed on account of endocarditis complicating tonsillitis are often attended with untoward results. The diminished defensive power of the organism may be shown by calculating the bactericide index. One may determine the time to operate by this diagnostic method. The normal index is between 50 and 55, which means that the organism is in a positive defensive phase. When this index number prevails, complications after operations on the tonsils may be averted. If the bactericide index is lower when the patient presents himself for operation he is in a negative defensive phase, a postoperative complication is to be feared, and the operation should be postponed.

"ALLERGIC" CHARACTER OF MIGRAINE

Dr. Béla Fornet, with his assistants, made extensive investigations into the cause of migraine and came to the conclusion that most cases show a decided "allergic" character. In its origin, an important factor is the constitution.

PROPHYLAXIS AGAINST DIPHTHERIA

Dr. Béla Keserü declared that the most efficacious method of protection against diphtheria is immunization with the Ramon anatoxin, which has proved to render 90 per cent of those inoculated immune. The protection, according to the statements of competent foreign authors, lasts for at least four or five years. In the county of Balatonfüred immunization with the Ramon anatoxin has been made compulsory. In 1931, 2,922 children were given anatoxin three times. The result is that during the three years that has elapsed only one of the inoculated children has contracted diphtheria, and that case was very mild.

VITAMIN RESEARCH IN PEDIATRICS

Dr. Joseph Duzár, a university professor, has found that the feeding of infants with cow's milk is fraught with danger, owing to the lack of vitamins of the milk, brought about not only by repeated cooking and pasteurization but also by the feeding of cows in winter with fodder. The overfeeding with such milk infants with certain ailments brings on relative starvation; that is hypovitaminosis. The younger the infant the greater its relative vitamin need and the more the vitamin loss, with corresponding increase in susceptibility to fevers. The manifest severe avitaminoses in infants are rickets and certain eye conditions. More frequent are the latent avitaminoses, which also occur in babies nursed by mothers who exist on foods lacking in fats. Also one often encounters babies overfed with farinaceous foods. In such cases there is retardation of growth, loss of appetite, edematous obesity and a tendency to catarrhal, feverish disturbances. Modern pediatrics regards it as its duty to feed these delicate and emaciated babies with foods containing an adequate quantity of vitamins. Vitamin research has shed a new light on the manysidedness of the value of mother's milk, the food that is best adapted to the infant organism.

Marriages

WILLIAM J. ELLIS, Covington, Va., to Miss Bessie Virginia Withrow of Clifton Forge, June 8.

ISAAC AVERY PHIFER JR., Buffalo, N. Y., to Miss Marilou Hamilton of Asheville, N. C., July 18.

WILLIAM E. MITCHELL, Atlanta, Ga., to Mrs. Helen Crockett of Ventura, Calif., June 12.

EUSTACE G. HESTER, Saginaw, Mich., to Miss Anna Pope Bland of Shelbyville, Ky., July 7.

HARVEY N. MIDDELTON, Anderson, Ind., to Mrs. Stella Walker of Indianapolis, June 16.

JOHN DE WITT MORLEY to Miss Genevieve E. Wager, both of Ashtabula, Ohio, June 14.

ROYAL M. MONTGOMERY, New York, to Miss Maxine Cooley of Denver, June 9.

WILLIAM B. MATTHEW, Gary, Ind., to Miss Ruth Adams of Indianapolis, June 2.

JOHN H. GLYNN to Miss Eleanor C. Schmidt, both of Chicago, June 18.

Deaths

Rudolf **Bolling Teusler,** Tokyo, Japan; Medical College of Virginia, Richmond, 1894; Associate Fellow of the American Medical Association; assistant professor of pathology and bacteriology at his alma mater, 1896-1900; in 1903-1904 Associated Press correspondent in Japan; member of the commission to provide postgraduate medical training in the United States for Japanese students; headed the American Red Cross mission which accompanied the American Expeditionary Forces to Siberia in the World War; since 1918 honorary physician to the American Embassy in Tokyo and from 1909-1912 he was physician to the British Embassy in Tokyo; founder and since 1900 director of St. Luke's International Hospital, Tokyo, and since 1925 director of St. Barnabas' Hospital, Osaka; aged 58; died, August 10.

Robert **Hill Davis,** University, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the Missouri State Medical Association; professor emeritus of dermatology, St. Louis University School of Medicine; formerly dermatologist to the Jewish, St. Anthony's and Bethesda hospitals, St. Louis; visiting dermatologist to St. Louis City and the Barnard Skin and Cancer hospitals, St. Louis; aged 58; died, June 19.

Jonathan **Mayhew Wainwright** ✠ Scranton, Pa.; Columbia University College of Physicians and Surgeons, New York, 1899; secretary of the American Society for the Control of Cancer; member of the American Surgical Association and fellow of the American College of Surgeons; veteran of the Spanish-American and World wars; surgeon in chief of the Moses Taylor Hospital; aged 60; died, August 3, of carcinoma.

Herbert **Eliot Herrin** ✠ Boston; Tufts College Medical School, Boston, 1910; member of the American Psychiatric Association and the New England Society of Psychiatry; acting medical superintendent of the Boston State Hospital; aged 51; died suddenly, July 15, of cerebral embolism, on the S. S. *Somerset* while on his vacation, just before the boat reached Baltimore.

John **Berton Carnett** ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1899; professor of surgery, University of Pennsylvania Graduate School of Medicine; served during the World War; member of the Associated Anesthetists of the United States and Canada; aged 57; on the staff of the Graduate Hospital, where he died, July 29, of pneumonia.

Harry **Stober Carmany,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; fellow of the American College of Surgeons; served during the World War; aged 66; formerly associate surgeon to the Episcopal Hospital and visiting surgeon to the Memorial Hospital, where he died, July 14, of carcinoma.

Isador **David Bronfin** ✠ Denver; Long Island College Hospital, Brooklyn, 1911; assistant professor of medicine in the department of tuberculosis, University of Colorado School of Medicine; fellow of the American College of Physicians; medical director of the National Jewish Hospital; aged 47; died, July 31, of tuberculosis.

William Henry Johnson, Charleston, S. C.; University of Virginia Department of Medicine, Charlottesville, 1893; member of the South Carolina Medical Association; professor of orthopedics, Medical College of the State of South Carolina; on the staff of the Roper Hospital; aged 63; died, April 14, of heart disease.

Bradford Frankfort Clutter, Borger, Texas; University of Louisville (Ky.) School of Medicine, 1906; member of the State Medical Association of Texas; past president of the Hutchinson County Medical Society; aged 53; died, April 27, in a hospital at Hines, Ill., of papillomatosis of the bladder.

Othello Morino Bourland, Van Buren, Ark.; Vanderbilt University School of Medicine, Nashville, Tenn., 1881; Bellevue Hospital Medical College, New York, 1883; member of the Arkansas Medical Society; aged 75; died, June 28, of coronary thrombosis.

Ivan Isaac Yoder ✠ Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1904; served during the World War; on the staff of the Lutheran Hospital; aged 58; died suddenly, July 12, of heart disease.

Jeremiah Francis Crowley, Adams, Mass.; Baltimore Medical College, 1894; member of the Massachusetts Medical Society; on the staff of the Plunkett Memorial Hospital; aged 62; died, July 4, of illuminating gas poisoning, self administered.

Damon Alonzo Brown, Madison, Wis.; Washington University School of Medicine, St. Louis, 1915; member of the American Urological Association; aged 44; died, May 14, in the Madison General Hospital, of streptococcic endocarditis.

Ossip Wanshenk, New York; University of Kharkov, Russia, 1894; member of the Medical Society of the State of New York; aged 60; died, April 20, in the Mount Sinai Hospital, of lobar pneumonia, arteriosclerosis and heart disease.

William Folsom Spaulding ✠ Greeley, Colo.; Rush Medical College, Chicago, 1902; past president and secretary of the Weld County Medical Society; on the staff of the Greeley Hospital; aged 58; died, June 26, of coronary thrombosis.

Walter Baylor Evans-Lombe ✠ Boise, Idaho; Northwestern University Medical School, Chicago, 1931; on the staff of the Idaho State Soldiers' Home Hospital; aged 33; was killed, June 30, in an automobile accident.

George Simenton, Pontiac, Mich.; Victoria University Medical Department, Coburg, Ont., Canada, 1885; member of the Michigan State Medical Society; aged 72; died, May 19, of carcinoma of the stomach.

Eugene Nesbit Gatlin, Brookshire, Texas; University of Arkansas School of Medicine, Little Rock, 1888; member of the State Medical Association of Texas; aged 73; died, March 25, of cerebral hemorrhage.

Lincoln Ellsworth Kidder, State College, Pa.; Jefferson Medical College of Philadelphia, 1896; member of the Medical Society of the State of Pennsylvania; aged 69; died, June 3, of cardiac decompensation.

Walter Fisk Boggess ✠ Louisville, Ky.; Louisville Medical College, 1886; professor of medicine and clinical medicine, University of Louisville School of Medicine; aged 71; died, July 1, of heart disease.

David Fuller Bentley, Camden, N. J.; Medico-Chirurgical College of Philadelphia, 1904; formerly county coroner; aged 74; died, June 25, in Miami, Fla., of coronary thrombosis and arteriosclerosis.

William H. Aikman ✠ Natchez, Miss.; Tulane University of Louisiana Medical Department, New Orleans, 1885; aged 74; died, June 30, of nephritis, chronic encephalitis and Parkinson's disease.

Benjamin F. Tarver, Star City, Ark.; University of Louisville (Ky.) School of Medicine, 1891; member of the Arkansas Medical Society; aged 70; died, June 20, of cerebral hemorrhage.

Elisha Gregory, Mont Belvieu, Texas (licensed in Texas under the Act of 1907); member of the State Medical Association of Texas; aged 56; died, April 9, in Houston, of lobar pneumonia.

Philip George Biddle, Dushore, Pa.; Jefferson Medical College of Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; aged 67; died, May 21, of carcinoma.

Jose Escabi, Mayaguez, P. R.; Harvard University Medical School, Boston, 1921; member of the Medical Association of Puerto Rico; aged 50; died, April 15, of uremia and acute nephritis.

Callie Brown Charlton, Portland, Ore.; Willamette University Medical Department, Salem, 1879; Hahnemann Medical College and Hospital, Chicago, 1886; aged 84; died, April 22.

Abraham Epstein, Philadelphia; Medico-Chirurgical College of Philadelphia, 1910; aged 48; died, June 24, in the Temple University Hospital, of carcinoma of the rectosigmoid.

Albert W. Lindbohm, Erwin, Mich.; Saginaw (Mich.) Valley Medical College, 1900; member of the Michigan State Medical Society; aged 64; died, March 18, of acute myocarditis.

J. Baptist Butts, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; aged 83; died, March 18, of chronic nephritis.

James Jefferson Johnson, Sulphur Springs, Texas; Memphis (Tenn.) Hospital Medical College, 1897; served during the World War; aged 57; died, March 3, of heart disease.

Amos D. Gray, Chillicothe, Mo.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1901; aged 69; died, in February, of carcinoma of the stomach.

Leonidas T. Brown, Kansas City, Mo.; Ensworth Medical College, St. Joseph, 1893; aged 64; died, January 28, in St. Luke's Hospital, of cerebral hemorrhage.

Alfred L. Fein ✦ Chicago; Loyola University School of Medicine, Chicago, 1917; aged 46; died, July 18, of carcinoma of the lung with metastasis to the brain.

Joseph L. Nicholson, Haddonfield, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1890; aged 78; died, March 15, of chronic myocarditis.

Elias Bibby, Milwaukee; University of the City of New York Medical Department, 1889; aged 65; died, July 4, of carcinoma of the thyroid gland.

Yamei Kin, Peiping, China; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1885; aged 70; died, March 5.

John Edward Pope, Zama, Miss.; Memphis (Tenn.) Hospital Medical College, 1913; aged 49; was found dead, April 1, of a self-inflicted bullet wound.

M. L. Johnson, West Point, Tenn.; University of Tennessee Medical Department, Nashville, 1901; aged 66; died, March 29, of tuberculosis.

Thomas Rickett Pooley Jr. ✦ Newton, N. J.; Cornell University Medical College, New York, 1907; aged 48; died, July 5, of pneumonia.

Frederick Eugene Vrooman ✦ St. Francis, Minn.; Kentucky School of Medicine, 1902; aged 61; died, June 25, of cerebral hemorrhage.

James Clifton Gantt, Pulaski, Tenn.; Meharry Medical College, Nashville, 1910; aged 53; died, April 25, in the Hale Hospital, Nashville.

Isaac Sher, Chicago; Illinois Medical College, Chicago, 1901; aged 78; died, July 25, of myocarditis, nephritis and arteriosclerosis.

Norman Francis Jacob, Kent, Ohio; Michigan College of Medicine and Surgery, Detroit, 1900; aged 61; died, in May, of heart disease.

Mark Cyrus Gaines, New Orleans; Bennett Medical College, Chicago, 1913; aged 50; died, February 24, of cerebral hemorrhage.

Walter R. Barnes, Quincy, Mass.; University of Vermont College of Medicine, Burlington, 1882; aged 79; died, January 18.

Henry C. Walbeck Jr., Louisville, Ky.; Kentucky School of Medicine, Louisville, 1905; aged 56; died, June 1, of heart disease.

Benjamin C. Morgan, Fort Worth, Texas; Atlanta (Ga.) Medical College, 1884; aged 75; died, January 31, of pernicious anemia.

Henry Thompson Burnap, Alton, Ill.; St. Louis Medical College, 1878; aged 78; died, July 3, of heart disease.

James George Ross, Embro, Ont., Canada; Rush Medical College, Chicago, 1900; aged 65; died, May 13.

Frank Mulford Hill, Eastman, Ga.; Meharry Medical College, Nashville, 1914; aged 49; died, April 25.

William R. Keeney, Tecumseh, Mich. (licensed in Iowa in 1886); aged 86; died, March 24, of influenza.

Fred Lyman Lewis, Cleveland; Cleveland Medical College, 1896; aged 60; died, in January.

Correspondence

McCOY NO LONGER WITH LOS ANGELES TIMES

To the Editor:—An anonymous letter received today enclosed a clipping from THE JOURNAL published by the American Medical Association under date of Aug. 4, 1934, Vol. 103, No. 5, carrying an article headed "A Dietary Quack Discusses Dysentery," in which it is stated that Dr. Frank McCoy of Los Angeles is associated with the Los Angeles *Times* as writer of a health column. I wish to correct this impression. Dr. Frank McCoy has not been with the Los Angeles *Times* since February 1932.

E. TAGGART,
Secretary to L. D. HOTCHKISS,
Acting Managing Editor.

DANGER IN ADMINISTRATION OF HUMAN SERUM

To the Editor:—In THE JOURNAL, July 21, page 192, appeared a current comment treating with the administration of human serum and advising caution in its administration. The article made reference to a recent California case that cost the life of a young boy. A footnote stated that the tragedy was occasioned by the incapability of the technician. I am the technician who prepared the serum, and in justice to yourself and to me I believe you should be advised of the outcome of the investigation that followed the death.

A coroner's jury composed of reputable physicians from all parts of this county returned a verdict exonerating me from liability and attributing the contamination of the serum to undetermined causes. It is true that they recommended state supervision of all laboratories engaged in making serum, but they did not in any manner lay the blame for this most unfortunate happening to me or to my laboratory.

The doctors composing the jury are as follows: Dr. S. S. Bogle, Dr. Laighton Ray, Dr. C. M. Carlson, all of Santa Rosa, Calif.; Dr. James G. Anderson, Dr. M. L. Lewis, Dr. H. S. Rogers and Dr. S. Z. Peoples of Petaluma, Calif.; Dr. Chester Marsh and Dr. Ernest Vieira, both of Sebastopol, Calif.; Dr. E. J. Finnerty of Sonoma, Calif., Dr. F. O. Butler of the Sonoma State Home, and Dr. D. C. Oakleaf of Cloverdale, Calif.

ALEX A. SOKOL, Santa Rosa, Calif.

ACUTE OUTBREAK OF TYPHOID

To the Editor:—During a recent visit of a large circus in this city, fever was discovered in several of the performers and laborers attached to the organization. Steps were immediately taken by the local health authorities, the chief physician of the circus, and members of the staff of Harper Hospital to examine every member of the group. July 23 and 24, seventy-eight men and women, ranging from the age of 15 to 50, were found to have typhoid or were suspected of being in the early stages of the disease. All of them were brought into Harper Hospital and isolated in a separate division of the hospital. Complete isolation precautions with a separate staff of nurses and physicians were placed in charge. Blood cultures and Widal tests were immediately done on the entire group.

At this time, forty-seven of these patients have been definitely proved to have a typhoid bacillus bacteremia. Twenty have been discharged after careful and repeated blood cultures, Widal tests and negative stool cultures.

The origin of the infection has not been fully determined. The Detroit Board of Health and the Michigan State Board

of Health have been investigating this phase of the problem. Among those isolated at Harper Hospital, no typhoid carrier was found among the food handlers. The date of the onset of the disease in each individual has varied. Some date the onset of their symptoms as early as July 9; others as late as July 23. The disease appeared among the performers, who never are permitted to eat food prepared in the mess kitchen that supplies food to the crew of the circus.

Seven women have the disease. The majority of one team of aerial performers is afflicted. Among the other members of the circus, the disease is spread among laborers, ticket seller, electrician and barber.

All but about twelve have typhoid in a severe form. One patient died in a state of hyperpyrexia.

This preliminary report is made for the purpose of recording this unusual outbreak and will be followed later on by a complete report of the subsequent events, the treatment, and the sequelae of the disease.

HUGO A. FREUND, M.D., Detroit.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF FRACTURE OF RIBS

To the Editor:—A white man, aged 37, was struck on the back, May 10, by some boards (truck mats), which fell a distance of about 8 feet as they were being lifted by a crane. The boards are estimated to weigh half a ton. They struck the patient a rather glancing blow, causing extensive abrasions on his shoulders and back. Roentgen examination revealed fractures of the first rib on each side at about the junction of the anterior and middle thirds, with separation of a good quarter inch in each fracture. My theory is that the great depression of the clavicle caused it to fracture the ribs, though no other ribs were broken, nor was either clavicle. Now after a period of six weeks there is still distinct crepitus in the fracture on the right side and roentgenograms reveal no callous formation and no diminution in the amount of separation on either side. The treatment has consisted of rest and the avoidance of muscular exertion. If you have any suggestions as to the proper procedure to obtain union in these fractures I will appreciate it. I can find very little in the literature on this type of fracture. What will be the prospect for permanent disability? When will it be safe for the man, a laborer, to resume work?

ROBERT H. WRIGHT JR., Phoebus, Va.

ANSWER.—A bilateral fracture of the first rib as a result of a blow on the back is uncommon. Such fractures may occur from a fall which causes the body to jack-knife sharply, so that the lower ribs are driven against the pelvis and the weight of the head and shoulders is driven downward and forward on the upper ribs. The fracture described in this note can be explained on this basis.

Rib fractures usually heal within a period of six weeks regardless of whether or not any immobilization is obtained. It is the practice of most clinics to strap the chest tightly, passing the adhesive tape around over an axillary pad and extending from near the midline in the back on one side and around in front to near the midline in the back on the opposite side. A second strip of adhesive tape should be placed from just below the axilla and posterior to it, around in front and over the opposite shoulder to the back, and a third similarly placed beginning below and behind the opposite axilla and passing upward and over the shoulder of the opposing side. This type of adhesive strapping can be worn for as long as three weeks unless the patient's skin is unusually susceptible to irritation from zinc oxide.

These fractures will probably unite and there will be no permanent disability. The patient should not be allowed to return to work until there is clinical evidence of union characterized by absence of crepitus, palpable tenderness, respiratory pain, and possibly the presence of palpable callus, which can usually be demonstrated in the roentgenograms. It is well known that large sections of ribs can be excised surgically with subsequent complete restoration through periosteal new bone formation. The fact that there has been separation of the ends of the fragments in this case no doubt accounts for the delay in union; but the prospect for ultimate complete recovery should be good.

CAUDAL BLOCK ANESTHESIA

To the Editor:—I wish to ask your opinion regarding a problem in regional anesthesia. I have used sacral (caudal) anesthesia frequently in the past, and still prefer it for rectal and perineal work. However, in about 20 per cent of the cases, for no reason that I can discern, the anesthesia fails to work. My technic is identical for all the cases in which I use it and in the majority of cases it gives satisfactory anesthesia. I use 30 cc. of 2 per cent procaine hydrochloride and introduce it at a depth of about 6 cm. through the sacral hiatus. The patient rests on her back for one-half hour before the operation is started. The books to which I have referred do not explain the failures which occur in the experiences of numerous other men besides myself. Can you explain the failures in detail and advise steps to obviate them? Kindly omit name.

M.D., New York.

ANSWER.—Caudal block by means of 30 cc. of 1 per cent procaine solution, injected into the caudal canal, has an incidence of unsatisfactory anesthesia of about 30 per cent. There is, of course, always at least partial anesthesia as a result of the injection. In some cases the perineum and anus will show areas of anesthesia, hyperesthesia and small areas of normal sensation after such an injection. With the use of the 2 per cent solution there is some reduction in the percentage of cases in which there is failure to obtain anesthesia. With the 3 per cent solution this percentage is still further reduced. However, the facts that a solution stronger than 1 per cent procaine is not advised by the American Medical Association Committee on Anesthetics and that, from clinical experience, reactions to intravenous injections of procaine solution occur occasionally in connection with sacral block, indicate that the most practical solution is 1 per cent procaine hydrochloride. From 25 cc. (in small persons) to 35 cc. (in large individuals) may be injected in the caudal canal; 10 or 15 cc. of 1 per cent procaine solution should be injected in each second sacral foramina. Anesthesia should appear in about twenty minutes and is usually satisfactory. It is important, in placing a needle in a foramen, to be sure that the foramen has been entered. This may be ascertained by advancing the needle for one-half inch after one thinks the foramen has been entered. Then the needle may be withdrawn so that the point of it is just inside the opening of this bony foramen. The test to make sure that the caudal needle is in the caudal canal is to bring the needle against the posterior bony wall of the caudal canal. This test is applicable except when there is spina bifida occulta of the sacrum. Many of the failures to induce sacral block anesthesia with the caudal injection are due to failure to enter the caudal canal. Occasionally an individual is so certain that the caudal canal has been entered that he can be convinced that it has not been only when the needle is withdrawn and reinserted and anesthesia produced after the second attempt. Anesthesia is sometimes delayed when the solution is very cold. Vigorously boiling the procaine solution causes it to lose its effectiveness. If anesthesia is to be produced with still greater certainty, injection of the caudal canal through the second, third and fourth sacral foramina on each side should be carried out.

The following are relevant references:

Mayer, Emil: The Toxic Effects Following the Use of Local Anesthetics, THE JOURNAL, March 15, 1924, p. 877.

Labat, L. G.: Regional Anesthesia; Its Technique and Clinical Application, Philadelphia, W. B. Saunders Company, 1922.

Lundy, J. S.: A Method for Producing Block Anesthesia of the Sacral Nerves, Am. J. Surg. 4:262 (March) 1928.

FATE OF BARBITURIC ACID PREPARATIONS IN BODY

To the Editor:—Can you give me references to literature or information concerning the fate of the different barbituric acid preparations after they enter the body? Is there any accurate clinical information to show that the different products on the market differ in any way in their action when taken in comparable amounts? Is there any chemical reason to suspect that they should in any way be different? Kindly omit name.

M.D.

ANSWER.—Of the barbituric acid derivatives studied in this connection, barbital and phenobarbital are largely excreted as such in the urine (barbital about 85 per cent, phenobarbital about 30 per cent); amytal and pentobarbital appear in the urine only in traces or not at all. Nephrectomy markedly prolongs narcosis from barbital and from phenobarbital but not from amytal, pentobarbital, neonal, ipral, dial, allurate, phanodorn or pernocton. Experimentally produced liver damage in animals (to an extent such that disappearance of bromsulphalein from the blood is significantly delayed) does not appreciably affect the duration of action of barbital but does prolong the action of pentobarbital. It appears from these studies that recovery from the influence of barbital or of phenobarbital is dependent largely on excretion of the compound by the kidneys, whereas recovery from narcosis by amytal, pentobarbital, neonal, ipral, dial, allurate, phanodorn

or pernocton is dependent on destruction of the drug in the body. In the case of pentobarbital an important, if not the only, site of destruction appears to be the liver; presumably this is true of the other members of this group also. The end products of these compounds have not been isolated. There is considerable clinical evidence of differences in the effects of the various barbituric acid derivatives. It is obvious from the foregoing that barbital or phenobarbital should not be employed in cases in which significant kidney damage is present and that pentobarbital (and presumably the others of the group) should be employed with care if at all in patients with impaired liver function. The other differences are concerned chiefly with duration of action, pentobarbital being the shortest acting member of the series of those given orally (evipal appears to produce even a shorter effect but this drug is given intravenously) and barbital probably the longest. Some of the drugs, like evipal and pernocton, have a tendency to produce clonic muscular spasms in occasional individuals. The barbiturates also differ in the ratios of their effective and fatal doses; this, however, is of little consequence in ordinary clinical usage, as the safety factor usually is sufficiently great even with the more toxic preparations. For further information the following references should be of assistance:

Sollmann, Torald: Manual of Pharmacology, ed. 4, Philadelphia, W. B. Saunders Company, 1932, p. 769.

Fitch, R. H., and Tatum, A. L.: Duration of Action of Barbituric Acid Hypnotics as a Basis of Classification, *J. Pharmacol. & Exper. Therap.* **44:** 325 (March) 1932.

Fulton, J. F., and Keller, A. D.: Comparison of Dial, Amytal and Pentobarbital in the Chimpanzee, *Surg., Gynec. & Obst.* **54:** 764 (May) 1932.

Hirschfelder, A. D., and Haury, V. G.: Effect of Nephrectomy on Duration of Narcosis from Barbituric Acid Derivatives, *Proc. Soc. Exper. Biol. & Med.* **30:** 1059 (May) 1933.

Pratt, T. W.: A Comparison of Pentobarbital and Barbital as Related to Detoxication in the Liver, *J. Pharmacol. & Exper. Therap.* **48:** 285 (July) 1933.

Shonle, H. A.; Keltch, A. K.; Kempf, G. F., and Swanson, E. E.: Elimination of Barbituric Acid Derivatives in the Urine, *J. Pharmacol. & Exper. Therap.* **49:** 393 (Dec.) 1933.

SCHULZ-CHARLTON REACTION IN SCARLET FEVER

To the Editor:—A child, aged 10, complained of lassitude, slight soreness in the epigastrium, and fever of six hours' duration. Examination disclosed marked flushing of the face; a diffuse red eruption limited to the abdomen, the neck, the thighs, the arms and the chest; slight, dusky redness of the anterior pillars in the throat; the tongue clear, of a deep red, the papillae standing out prominently and almost transparent. The anterior cervical glands were slightly enlarged. The temperature was 102.2 F. and the pulse 120. The throat was not sore, there had been no vomiting, the onset was so gradual as to escape the attention of the unusually vigilant mother, and the Schulz-Charlton test produced no change in the color of the rash. The child had German measles two months ago, and the rash cannot be attributed to recent drug administration. Another physician maintains that even with a negative Schulz-Charlton test the picture of rash, fever and strawberry-like tongue must be diagnosed as scarlatina, while my understanding of the Schulz-Charlton test warrants a negative diagnosis in the case. Possibly I place too much emphasis on the infallibility of the Schulz-Charlton reaction; but if my understanding of the reaction is correct, i. e., that it is in effect a neutralization of the toxin in the skin by the specific antiserum, I should conclude that the test is infallible. Kindly omit name and address.

M.D., Wisconsin.

ANSWER.—The Schulz-Charlton test is not always infallible, because the rash is sometimes too slight to show a good area of blanching, because the rash is old with extravasation of blood into the skin, or because there may be a central area of reddening due to the reaction of the skin to the serum itself in case horse serum is used or to the preservative in case preserved convalescent serum is injected; in this case, however, there can usually be seen an outer zone of blanching surrounding the central red area. With the exceptions noted, the Schulz-Charlton reaction is positive in scarlet fever.

Nose and throat cultures made on blood agar plates and examined for the presence of hemolytic streptococci would be helpful in diagnosis.

DIGITALIS IN TREATMENT OF FAILING HEART

To the Editor:—Would you kindly through the medium of your journal evaluate the use of digitalis in old hearts with moderate decompensation but no fibrillation. My experience with the latter drug at the local hospital here in a large number of cases is that the added strain, in spite of the better nutrition of the heart, hastens rather than prolongs the final outcome. What is the present status of theobromine in these cases? Kindly omit name and address.

M.D., New York.

ANSWER.—There is no evidence indicating that the administration of digitalis places an added strain on the failing heart. On the contrary, when the myocardium is laboring under difficulty, digitalis exerts a tonic effect on the heart muscle and augments cardiac output. It is essential to use a potent, biologically standardized preparation, in proper dosage. In many elderly patients, after compensation has been restored, continuous administration of digitalis in maintenance doses (from 0.1 to 0.2 Gm., or 1½ to 3 grains, each day) will often serve to prevent the recurence of congestive heart failure.

Theobromine, like the other members of the xanthine group, has a double action: (1) It dilates the coronary arteries and thereby increases the volume of blood that flows through the heart muscle; (2) it is a mild diuretic. It is therefore sometimes useful in cases of coronary sclerosis, or in the presence of edema. It is usually given as theobromine sodiosalicylate in doses of from 0.65 to 1 Gm. (10 to 15 grains) three or four times a day. The xanthine preparation at present most commonly employed for the relief of anginal pain is theophylline ethylenediamine. It is dispensed in tablets of 0.1 Gm. (1½ grains) each, one of which may be given three or four times a day over a period of weeks or months.

MUSCLE SPASM AND CRAMP

To the Editor:—A woman, aged 42, is subject to painful contractions of the muscles. The condition began twelve years ago in the muscles in the calf of the right leg. It now involves the muscles of all limbs and at times the muscles of the trunk. These contractions come on particularly on exertion. In the arm, for instance, lifting a heavy pan of water will cause a contraction of the biceps, which may last three days. The muscle will remain hard and tender; extension of the forearm at the elbow is possible but painful. There should be no foci of infection present. She has had 20 grains (1.3 Gm.) of calcium lactate three times daily but can see no change. I should like to know whether you can offer any suggestions. Please omit name.

M.D., North Dakota.

ANSWER.—From the description of the muscle spasms, lasting as long as three days, the spasm must be tonic. Muscular cramps of this type usually fall into the group of tetany on the basis of calcium deficiency. A condition of this type lasting for twelve years without more evidence of the cause is most unusual. Parathyroid disease should be considered. The diagnosis of tetany may be made by observation of its other phenomena, Trousseau's sign, Erb's symptom and the Chvostek sign together with the finding of a low level of blood calcium. The administration of calcium in the dose mentioned might be totally inadequate without the use of parathyroid extract or possibly viosterol. Larger doses of calcium alone, from 8 to 12 Gm. daily, are capable of raising the calcium level of the blood and relieving the symptoms of tetany.

In the event that the calcium metabolism is found to be normal, other causes for increased muscle irritability of a chronic type must be considered. These are most likely to be of central origin. Lesions involving the pyramidal tract might be considered, but the neurologic examination should be conclusive. The neurologic conditions producing increased muscle irritability usually result in contractures, with muscle weakness and muscle atrophy, rather than cramps.

HEALTH HAZARDS IN CLEANING INDUSTRY

To the Editor:—I should like information on the probability of poisoning in the following case: A woman, aged 55, who is employed by a large department store, became ill after cleaning a considerable number of garments for several weeks with chloroform and oronite (a cleaning solvent sold by the Standard Oil Company). A man working with her also became ill. The symptoms in both cases were referable to the stomach. My patient complained of a bad taste in the mouth, a coated tongue, a burning sensation in the throat and sensations of burning and fulness under the sternum. Examination revealed nothing of significance except the coated tongue and gastric juice of low acidity containing large amounts of mucus. It has been reported to me that the man believes he has a cancer of the stomach. Is it possible for chloroform poisoning to result from a contact of this type? The workroom at the time was poorly ventilated, but now an exhaust fan has been installed. Are you familiar with cases of oronite poisoning? Gloves were not worn.

J. H. GIVENS, M.D., Seattle.

ANSWER.—This query fails to provide adequate information as to the extent of exposure. Naturally the exposure would be greater if actual submerging of garments took place in contrast to spotting work. An inquiry was made of the Standard Oil Company of the area in which this reply originated. The company stated that it had no knowledge of any such product as "oronite" but indicated that other companies of the same name might make or market such a product. In any event, such a product might be expected to contain as its major ingredient a petroleum fraction of the general range of naphtha. The somewhat noncharacteristic symptoms described might arise from causes other than industry, but if they are attributable to industrial sources either the chloroform or naphtha readily might produce just the clinical picture suggested. Chemically, chloroform is similar to carbon tetrachloride, which is commonly accepted as highly toxic. In addition, chloroform is said to possess a toxicity 2.2 times as great as carbon tetrachloride.

Even in a mild case, such as this may appear to be, a headache and a diarrhea usually accompany the manifestations indicated as present. In severe cases of chloroform toxicity the chief symptomatology can be traced to the liver, which may undergo necrosis. Guanidine poisoning may arise. The damage done by chloroform may be followed by rapid and complete recovery if further exposure is avoided, but the damage from naphtha may be prolonged or permanent. Condemnation is to be extended regularly to the extensive use of chloroform for dry cleaning except under conditions completely protecting the worker against exposure—especially against the inhalation of vapors.

SYPHILIS OF NERVOUS SYSTEM

To the Editor:—I should like your advice as to the therapy in the following case: A man, aged 34, had syphilis about eight years ago and at that time had a year's treatment by vein. About four weeks ago he became morose, languid and irresponsive. He lies and looks at the ceiling for hours at a time and takes no interest in anything going on around him. His Wassermann reaction is 4 plus. No spinal fluid test has been done but it would undoubtedly be positive. All reflexes are increased. Could you kindly advise as to therapy with respect to drug, dosage and frequency. Please omit name.

M.D., California.

ANSWER.—Further studies are essential, including examination of the spinal fluid, in order to determine the location of the syphilitic infection; without them a rational selection of therapy is not possible. It may be that there has been a parenchymatous invasion of the central nervous system—a dementia paralytica. Therapy in this condition would differ largely from that in other forms of syphilis and would include the selection of some form of fever-producing means, the administration of tryparsamide, or both. This selection must be based on a thorough study of the eyes, the cardiorenal system, and so on.

FOOD OF THE CHINESE

To the Editor:—THE JOURNAL, January 27, published an editorial comment called "A Dietary Ingenuity." I should like to ask the author where the recent analyses of Chinese foods and the discussion of culinary methods in providing adequate calcium by Frances Clinton may be found.

LAVAUGHN DENNISON, Nutritionist, Pittsburgh.

ANSWER.—The author of the item referred to in the *Journal of Home Economics* (**25**:871 [Dec.] 1933) writes: "Despite the fact that the Cantonese do not use any milk or milk products, the diet of these Chinese people is adequate in calcium, protein and calories, according to Pik Wan Hoh, a graduate student in home economics at Oregon State College, whose home is Canton, China. At a recent quarterly meeting of the Oregon State Nutrition Council Miss Hoh discussed in detail the eating habits and customs of Chinese among the better classes of city people as she has known them in southern China." Details regarding these statements can doubtless be secured by correspondence with the Department of Home Economics at the Oregon State College in Corvallis. For expert information regarding the composition of the foods of the Chinese, it may be advisable to consult Prof. William H. Adolph, Department of Chemistry, Yenching University, Peiping, China. He has made extensive investigations and published numerous papers, partly in Chinese journals, on this subject.

TREATMENT OF RED NOSE DUE TO PERMANENTLY DILATED CAPILLARIES

To the Editor:—I have a patient with a very red nose. Only the skin is involved. It is smooth. The capillaries are dilated and it bleeds profusely when cut. It becomes violet or cyanotic on exposure to cold. The condition was thought to be a chronic erysipelas, and protein shock therapy was used with no results. There are no pustules, and a smear revealed sebaceous material but no organisms. The patient has never had any constitutional symptoms. He works hard in a lumber yard and paint shop. The blood pressure is normal. There is no erythema of the ears or extremities. Is this an infectious process or a vascular disturbance? What is the treatment? What substances are best for the intradermal injection of hemangiotelangiectasis (port wine stain) besides hot water? Could they be used in this case? Please omit name and city.

M.D., Arizona.

ANSWER.—These cases are not infectious but are due to paralysis of the vasoconstrictor apparatus controlling the capillaries and venules of the skin. This apparatus is more sensitive in the center of the face than anywhere else, responding readily to various stimuli. After many and frequent responses of this kind, the constrictor apparatus wears out and the dilatation becomes permanent. In a typical case of acne rosacea this involves the nose, adjacent cheeks, the center of the forehead and the center of the chin; but in certain cases, as in the one under discussion, it is confined to a smaller area, for reasons unknown.

Exposure to extremes of temperature, either cold or heat, are responsible, at least in part, for some cases. Obstruction to the circulation within the nose or a pustular folliculitis in the nares can be blamed for some cases. Focal infection about the teeth, in the tonsils or in the nasal cavity or its neighboring sinuses should be sought and eliminated if found. The gastro-intestinal tract should be thoroughly investigated. Hypoacidity, liver or gallbladder disease, or constipation may be at fault. The diet should contain no irritating foods or drinks. Very hot foods or drinks, alcohol in any form, tobacco, tea, coffee or chocolate, condiments, and rich meat dishes or desserts should be prohibited. In view of the patient's occupation, the possibility of chronic lead poisoning should be investigated.

Even though some such condition may be discovered and corrected, local treatment may be necessary before success can be achieved and in too many cases local treatment is the only hope. Constricting lotions, such as lotio alba, composed of sulphurated potassa, 2 Gm., and zinc sulphate, 2 Gm., in rose water to make 30 cc., may be used. The lotion should be dabbed on before retiring and allowed to dry on. Care should be taken in washing not to use very hot or very cold water. Lotio alba can be strengthened by increasing the solid ingredients or by the addition, after the lotion is made, of resorcin up to 10 per cent.

Roentgen rays, low voltage, unfiltered, in doses of from 37 to 75 roentgens, from one-eighth to one-fourth erythema dose, once a week until a total of two whole erythema doses or 600 roentgens has been given, is often successful. If the skin becomes dry and wrinkled during the treatment, no more roentgen rays should be given until this condition has cleared. There is more danger of overdosage in acne rosacea than in acne vulgaris because the patients are older, as a rule. Local medication, except soothing applications, are tabu during roentgen treatment.

If these measures fail, carbon dioxide snow, easily obtainable as dry ice, may be tried, a stick not over 1 cm. in diameter being used, applied with fair pressure for one second on each spot. If this causes no reaction and no improvement, the time may be cautiously increased until a slight reaction is obtained. By using a small stick and making many slight applications, one may avoid the checkered effect due to strong applications that cannot be made to cover the whole area exactly alike.

If it is thought necessary to use injections such as are used in the treatment of angioma, sodium morrhuate, 3 per cent solution in oil, is one of the best. It should be injected if possible into the venules (Biegeleisen, H. I.: Telangiectasia Associated with Varicose Veins, THE JOURNAL, June 23, p. 2092) at points 2 cm. apart near the border of each patch. A week later injections should be made between these points. As the border clears up, injections should be made nearer the center.

Electrolysis for the larger venules, the needle being inserted on the negative pole into the venule and a 1 to 2 milliampere current being allowed to circulate until the area has turned white, is also a helpful procedure.

URINE OF LOW SPECIFIC GRAVITY

To the Editor:—Please inform me as to what will cause low specific gravity in a urine specimen; for example, 1.001 or 1.002? I have had several of these cases of late and can find no reason for it in the textbooks. In none of the cases has there been any cardiac involvement and in no case has there been any rise in blood pressure. My latest case is one of a woman seven months pregnant who feels perfectly well but who has gained 11 pounds (5 Kg.) in the past month. Also, what could cause the great gain in weight?

M.D., Michigan.

ANSWER.—A urine of a specific gravity as low as 1.001 or 1.002 in a twenty-four hour specimen occurs only in diabetes insipidus. This is an uncommon condition due to a lesion of the posterior lobe of the pituitary gland or the adjacent area of the brain. In this disease the urine volume may reach from 4 to 30 liters daily. The patient naturally has great thirst and drinks equally large quantities of water. Solution of pituitary usually causes a return to normal volume.

The specific gravity of the urine varies greatly during the day, depending chiefly on the fluid intake, perspiration and nervous functional disorders. The total solids excreted daily are but slightly variable when compared with the fluid variations. Hence the specific gravity tends to vary in inverse ratio to the alterations in volume.

The normal range of specific gravity is from 1.008 to 1.028, with most results between 1.015 and 1.025. Except after the ingestion of great quantities of water a specific gravity as low as 1.001 or 1.002 is found only in diabetes insipidus. The

polyuria of chronic nephritis or hypertensive cardiovascular renal disease is associated with a lowered or fixed specific gravity, but the values are usually between 1.008 and 1.013.

From the foregoing statements it is obvious that the specific gravity of the urine, to be of value, must be taken several times during the day, or the total twenty-four hour specimen tested. Variations from 1.002 or 1.003 to 1.030 may occur in normal persons without indicating any pathologic condition.

TREATMENT OF MYELOGENOUS LEUKEMIA

To the Editor:—I am treating a case of myelogenous leukemia with the usual discouraging result and am writing you on the chance that you may have knowledge of some relatively new and successful procedure in the handling of this disease. I desire especially to learn of anything that is more successful than iron, arsenic and liver extract by mouth, transfusion, and roentgen therapy.

OTTIS LIKE, M.D., Monroe City, Ind.

ANSWER.—No new or more successful remedies of value in the management of myelogenous leukemia than those enumerated have appeared in recent years. Irradiation (with either x-rays or radium), while efficient in effecting clinical improvement and reducing the white blood count in the early stages of the disease, cannot be considered a cure, nor does it seem to prolong life. The disease continues to run an average course of about three and one-half years. Ultimately all patients with myelogenous leukemia lose their radiosensitivity and the employment of radiation under such circumstances or in the acute stage may be disastrous. A judicious use of radiation, therefore, seems to offer the greatest benefit that is possible to give. Iron, arsenic, liver feeding and transfusions may be employed as adjuvants.

BLOODY PLEURITIC FLUID AND CANCER

To the Editor:—It has frequently been said that bloody pleuritic fluid is pathognomonic of cancer of the lung. Is this altogether true? Are there not other conditions that will produce a bloody pleuritic effusion? Kindly send me the list of other conditions that may produce such effusion. Please omit my name. M.D., Indiana.

ANSWER.—A bloody pleuritic fluid is not pathognomonic of cancer of the lung. It may be caused by a malignant disease of the pleura and by inflammatory and traumatic conditions of both the lung and the pleura. Occasionally a tuberculous effusion will be blood stained. There is a type of spontaneous pneumothorax associated with large amounts of bloody effusion that may or may not be of tuberculous origin.

EFFECTS OF CALCIUM ON COAGULATION TIME

To the Editor:—I am told that calcium gluconate given in a dosage of from 100 to 150 grains (6.5 to 10 Gm.) a day will decrease coagulation time at the end of twenty-four hours, but that if the same dosage is continued for three or four days there will be an increase of the coagulation time. Please advise me about this.

GEORGE E. VAUGHAN, M.D., Louisville, Ky.

ANSWER.—The injection of calcium gluconate for three or four days in the doses mentioned will not increase the coagulation time in man. There are some in vitro studies on citrated blood which indicate that oversaturation with calcium may interfere with the clotting mechanism, but this cannot be substantiated in vivo.

INJECTION TREATMENT OF VARICOSITIES OF VULVA

To the Editor:—Is there any contraindication to the treatment by sodium morrhuate of varicosities of the vulval region during the sixth month of pregnancy? Please omit name. M.D., New York.

ANSWER.—The injection treatment of varicose veins of the saphenous system during the first seven months of pregnancy is a safe and good practice in experienced hands. Quinine, of course, is not used. There is no complete agreement, however, in treating vulvar varicosities, which drain only to a slight degree toward the saphenous system and are mainly tributaries of the internal iliac vein. An injection of sodium morrhuate into the vulvar veins may, although it undoubtedly hardly ever does, set up a pelvic thrombophlebitis. It is pertinent to ask how often such vulvar varicosities rupture and bleed during delivery and whether injections would prevent vulvar hematomas. It is also obvious, from a glance at the hugely dilated venous network of the vagina and vulva of the pregnant woman, that a few injections into the periphery of such a venous plexus can hardly obliterate more than a few short segments. There is at no place an isthmus or common trunk comparable to the terminal portion of the saphenous vein. From such considerations it would seem that the injection of vulvar varicosities, while practiced by some eminent workers in this field, has not much to offer and may lead to complications.

ASTHMATIC ATTACK DURING COITUS

To the Editor:—A case was recently brought to my attention of a woman suffering from asthma who states that the act of coitus, with the husband, brings on an attack of asthma. Could this be so? Could you refer me to literature regarding similar cases? Please omit name.

M.D., British Columbia.

ANSWER.—This condition is relatively common and is caused by sensitiveness to the effect of heat and effort (Duke, W. W.: *Arch. Int. Med.* **45**:206 [Feb.] 1930). It is frequently attributed erroneously to sensitiveness to spermatozoa. The same condition is a relatively common cause of impotence in man. It can be benefited in either case by a cold bath and avoidance of heat and effort prior to coitus. Furthermore, the weakness can be benefited by the effect of graduated exercise of the voluntary muscles.

EMBRYOLOGY OF EAR

To the Editor:—Will you kindly inform me at what age the ear has attained its full growth? M.D., Pennsylvania.

ANSWER.—The labyrinth of the ear undergoes slight, if any, changes after birth; that is, it has attained adult form at birth. As regards the middle ear, the situation is different. The drum membrane at birth has attained its adult form, as have the ossicles lodged in the middle ear. The external auditory meatus, at birth, consists only of the cartilaginous membranous part, which is attached to the os tympanum. There is no mastoid process or pneumatic cells. During the first decade the external meatus begins to take on its adult characteristics whereby the inner two thirds is made up of bone derived in part from the os tympanum, in part from the squamous bone, and a wedge-shaped segment of the upper posterior part of the meatus derived from the petrous bone. The development and pneumatization of the masoid process begin during the first year and are practically complete by the tenth or twelfth year.

"BILIVACCIN" STILL EXPERIMENTAL IN TYPHOID

To the Editor:—Please advise me as to the relative efficiency of immunization against typhoid by the hypodermic injection of killed bacilli and by the use of the "Bilivaccin" tablets by mouth. Is the "Bilivaccin" immunization against cholera and dysentery effective? And if so, to what degree? Please omit name. M.D., India.

ANSWER.—The only safe and generally accepted method of immunization against typhoid is by the injection of vaccines composed of killed bacilli. The use of "Bilivaccin" is still strictly in an experimental stage in the three diseases mentioned. Neither this product nor any other "vaccine" product recommended for oral administration has been accepted by the Council on Pharmacy and Chemistry.

TOBACCO COUGH IN CIGARET SMOKERS

To the Editor:—Please give me your opinion regarding the cause of so-called tobacco cough, seen commonly in cigaret smokers. Is it possibly caused by the fine particles of loose tobacco or tobacco dust?

G. LYNDE GATELY, M.D., East Boston, Mass.

ANSWER.—It is difficult to say definitely just what causes the so-called tobacco cough, but it is likely that several factors may be present. Not only do fine particles of tobacco enter the throat, but the heat of the fumes, the nicotine vapor, plus the products of partial combustion may be direct sources of the irritation. This is probably especially true with the inhalation of the smoke into the lungs such as is indulged in by the vast majority of cigaret smokers.

SINGLE TESTICLE AND POTENCY

To the Editor:—A patient, aged 29, married, in fine physical condition, is sexually potent but possesses only one testicle. He states that the other disappeared up the inguinal canal at puberty. The patient is anxious to know what his possibilities are in regard to sterility. Please omit name. M.D., Illinois.

ANSWER.—The fact that a man possesses only one testicle does not render him sterile as long as the one testicle is healthy and the various genital tubes are patent. The question can be definitely determined by the examination of a condom specimen, which should contain numerous motile spermatozoa.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 4. Sec., Dr. W. W. Council, Juneau.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written (Group B candidates).* The examination will be held in various centers throughout the country, Oct. 1. *Oral (Group A and Group B candidates).* San Antonio, Texas, Nov. 13-16. Sec., Dr. C. Guy Lane, 416 Marlborough St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B candidates).* The examination will be held in various cities of the United States and Canada, Nov. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Sept. 8. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Sept. 8 and San Antonio, Texas, Nov. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARIZONA: Phoenix, Oct. 2-3. Sec., Dr. J. H. Patterson, 320 Security Bldg., Phoenix.

COLORADO: Denver, Oct. 2. Sec., Dr. Wm. Whitridge Williams, 422 State Office Bldg., Denver.

CONNECTICUT: *Basic Science.* New Haven, Oct. 13. Address, State Board of Healing Arts, 1895 Yale Station, New Haven.

GEORGIA: Atlanta, Oct. 9-10. Joint Secretary, State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

IDAHO: Boise, Oct. 2 Commissioner of Law Enforcement, Hon. Emmitt Pfost, 205 State House, Boise.

IOWA: Des Moines, Oct. 8-10. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Lansing, Oct. 9-11. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 202-3-4 Hollister Bldg., Lansing.

MINNESOTA: *Basic Science.* Minneapolis, Oct. 2-3. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Medical.* Minneapolis, Oct. 16-18. Sec., Dr. E. J. Engberg, 350 St. Peter St., St. Paul.

MONTANA: Helena, Oct. 2. Sec., Dr. S. A. Cooney, 7 W. 6th Ave., Helena.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Omaha, Oct. 2-3. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEW HAMPSHIRE: Concord, Sept. 13-14. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.

NEW MEXICO: Santa Fe, Oct. 8-9. Sec., Dr. P. G. Cornish Jr., 221 W. Central Ave., Albuquerque.

NEW YORK: Albany, Buffalo, Syracuse and New York, Sept. 24-27. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Sept. 11-12. Sec., Dr. J. M. Byrum, Mammoth Building, Shawnee.

PUERTO RICO: San Juan, Sept. 4. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

WISCONSIN: *Medical. Reciprocity.* Green Bay, Sept. 11. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse. *Basic Science.* Madison, Sept. 22. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, Oct. 1. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Maryland (Homeopathic) June Report

Dr. John A. Evans, secretary, Board of (Homeopathic) Medical Examiners, reports the written examination held in Baltimore, June 12-13, 1934. The examination covered 7 subjects and included 70 questions. An average of 70 per cent was required to pass. Four candidates were examined, all of whom passed. One physician was licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Hahnemann Medical College and Hospital of Philadelphia		(1930)	86, (1933) 82, 91, (1934) 91

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Michigan Homeopathic Medical School		(1922)	Delaware

Delaware June Report

Dr. Harold L. Springer, secretary, Medical Council of Delaware, reports the written examination held in Wilmington, June 12-14, 1934. The examination covered 10 subjects and included 100 questions. A grade of 75 per cent was required in each subject. Thirteen candidates were examined, 10 of whom passed and 3 failed. One physician was licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Johns Hopkins University School of Medicine		(1933)	80.3
University of Maryland School of Medicine and College of Physicians and Surgeons		(1933)	77.3
Hahnemann Medical College and Hospital of Philadelphia		(1933)	85.8, 86.2, 87.9
Jefferson Medical College of Philadelphia		(1932)	80.6, (1933) 77.1
Temple University School of Medicine		(1933)	81.1
University of Pennsylvania School of Medicine		(1930) (1932)	81.5, 79.3

School	FAILED	Year Grad.	Per Cent
University of Michigan Medical School		(1933)	77.9
Jefferson Medical College of Philadelphia		(1931)	75.4
University of Pennsylvania School of Medicine		(1932)	73.8

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Medico-Chirurgical College of Philadelphia		(1914)	Penna.

New Hampshire March Report

Dr. Charles Duncan, secretary, Board of Registration in Medicine, reports the oral, written and practical examination held March 15-16, 1934. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. Four physicians were licensed by reciprocity and 1 physician was licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine		(1933)	75, 83
Boston University School of Medicine		(1933)	77
Temple University School of Medicine		(1933)	76
McGill University Faculty of Medicine		(1928)	85

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Maryland School of Medicine and College of Physicians and Surgeons		(1931)	Maryland
Tufts College Medical School		(1928)	Maine, (1931) Mass.
University of Vermont College of Medicine		(1885)	Illinois

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
College of Medical Evangelists		(1933)	N. B. M. Ex.

Book Notices

Modern Clinical Syphilology: Diagnosis, Treatment, Case Studies. By John H. Stokes, M.D., Duhring Professor of Dermatology and Syphilology in the School of Medicine, University of Pennsylvania. Second edition. Cloth. Price, $12. Pp. 1100, with 973 illustrations. Philadelphia & London: W. B. Saunders Company, 1934.

This monograph, first published in 1926 and reprinted in 1927 and 1928, the author has now found necessary to revise and rewrite. Many changes have been made. As the author himself states, fifteen of the twenty-three chapters have been completely rewritten and a new chapter on relapse and progression has been added. The book has been written for the completely uninitiated practitioner and student, as well as for the expert syphilologist. That the author has achieved this dual purpose and yet kept it entirely readable, there is no doubt. The discussions on progression, relapse and cure in syphilis are thorough and brought down to the latest continental and American views on these subjects. The chapter on the fundamental principles of treatment has been intelligently handled. The latest views in regard to types of arsenical and bismuth salts used in the treatment of syphilis are carefully considered. The use of acetarsone in the treatment of syphilis is discussed, and Dr. Stokes feels that this drug is not yet sufficiently perfected and studied to be safely used by the general medical man. He also advises only such antisyphilitic medicaments as are approved by the Council on Pharmacy and Chemistry. Throughout the volume the enormous statistical material from the Cooperative Clinical Group of five American University Syphilis Clinics, working in cooperation with the United States Public Health Service, has been utilized to bring out various factors as to the epidemiology, pathology, diagnosis and treatment of various phases of syphilis.

In such a well written volume it is difficult to pick out chapters for special mention. The chapters on the problems of immunity and syphilis, on cardiovascular syphilis, on central nervous system syphilis and on syphilis and pregnancy have been particularly well written.

Much value has been given to the book, for the student and the practitioner, through the case records, through the excellent illustrations and through the discussions of differential diagnosis.

On the other hand, the expert will find plenty of food for thought and sufficient citations at the beginning of the chapters to guide him into any channels that he may desire to follow through.

Naturally, in a formidable volume of this type it is impossible to devote as much space to each problem as could be desired. Possibly syphilis of the rectum and its relation to inguinal lymphogranulomatosis should have been more fully discussed. Moreover, despite their importance in differential diagnosis from syphilis, no mention of esthiomene or of the anorectal syndromes of lymphogranuloma inguinale is even made. In the tabulation of bismuth preparations on pages 252 and 253, figure 115, it is unfortunate that the amounts of metallic bismuth per dose have not been more carefully worked out. For example, the metallic bismuth content of bismuth oxychloride is 80 mg. per cubic centimeter. It is difficult to figure out how a 2 cc. dose would thus contain 0.2 mg. of metallic bismuth. The milligrams of metallic bismuth in Biliposol is incorrectly put as 0.180 with a 2 cc. dose. It should have been 0.080. There are numerous other errors in this one figure 115 that should be corrected in the next revision.

Throughout the entire volume there is a tendency to use the term "gland" for "lymph node," as on pages 657, 688, 966 and 1045, though in most places the proper term "lymph node" is employed. This is, no doubt, simply an oversight. And yet, for such a large volume it is remarkable how few mistakes have been made.

As far as is known, there is no single volume in the French, German or English language that so fully and so authoritatively handles syphilis as does this volume of Professor Stokes. One marvels that any one physician could be at the same time competent enough and brave enough to handle such an enormous task. The book is a landmark in American and continental medicine and is bound to be quoted more and more frequently as physicians become familiar with its scope, probity and clarity. It can be unhesitatingly recommended to both the practitioner and the expert syphilologist. It should be an integral part of every physician's library, for where is the physician or the specialist who at some time or other does not come into intimate contact with syphilis in his particular patient?

As far as the format and binding of the volume are concerned, it is especially well done. Moreover, a painstaking index of subjects and of authors, amounting to seventy-four pages, is appended.

Chirurgie infantile d'urgence. Par M. Fèvre. Préface du Pr Ombrédanne. Paper. Price, 70 francs. Pp. 452, with 110 illustrations. Paris: Masson & Cie, 1933.

This is a new monograph by Fèvre covering urgent surgery of infants and young children. The author, an assistant of Professor Ombrédanne, offers this volume as a complement to the third edition of Ombrédanne's Précis clinique et operatoire de chirurgie, which appeared in 1932. The volume is prefaced by a complimentary criticism by Ombrédanne, who admits that Fèvre is justified in adding the volume to supplement his own relative to urgent surgical conditions, as there is need for additional details concerning preoperative precautionary management and postoperative care, both of which are of such great importance, particularly in the emergency surgery of infants. Besides this it is well to have some of the newer urgent operations described in greater detail, with proper emphasis given to their indications. This volume, therefore, truly supplements the one by Ombrédanne, and the two together represent a valuable contribution on the work done by this large children's surgical service. This new volume presents, in valuable detail, the clinical considerations concerning the indications, preoperative preparation, operative procedures and postoperative management of the surgical emergencies of infants and young children as these are carried out in this important clinic today. The operative procedures consist essentially of those which are used and found most valuable. It is a volume based on personal experience. The material begins with a short chapter on general preoperative and postoperative considerations, including the choice of anesthetic, complications during and following operation, blood transfusion, and hemophilia. The largest part of the volume considers the urgent surgical conditions of the various regions of the body. This is followed by a chapter on general infections and burns. The final chapter discusses congenital malformations demanding immediate surgical intervention. The indications of operation are thoroughly discussed. When they vary, depending on the age, the pathologic variations and the clinical course at various ages, he discusses them in the case of the newly born, young infants, young children and, in some instances, older children. The considerations are handled in a masterful manner and the information is down to date. The operative details are similarly handled and the book contains a vast amount of valuable, practical, clinical information. It is not at all a mere catalogue of well known fundamental facts but, instead, a scholarly presentation and critical analysis of present knowledge.

This volume, together with Ombrédanne's volume, constitutes a valuable presentation of modern surgery in infants and young children.

Arbeit und Gesundheit: Sozialmedizinische Schriftenreihe aus dem Gebiete des Reichsarbeitsministeriums. Herausgegeben von Professor Dr. Martineck, Ministerialdirigent im Reichsarbeitsministerium. Heft 24: Die Folgen der Entmannung Erwachsener an der Hand der Kriegserfahrungen dargestellt. Von Professor Dr. Johannes Lange, Direktor der Psychiatrischen und Nervenklinik der Universität Breslau. Paper. Price, 5 marks. Pp. 178, with 2 illustrations. Leipzig: Georg Thieme, 1934.

A series of cases of emasculation resulting during the World War are discussed by the author. He states that while the loss of the testes, after full sexual maturity, is not followed by serious consequences in a certain number of cases, marked somatic and psychic manifestations follow castration in a greater number. The problem is of social and forensic importance. The conclusion that emasculation results in epilepsy and in insanity is not true. Castrated individuals may be useful members of society. The author disagrees with the conclusions of Möbius that loss of the gonads results in diminution of combativeness and initiative, and to the dicta of Fischer that emasculation produces schizophrenia or schizophrenic tendencies. The loss of the testicles may create, the author states, serious somatic and psychic manifestations, such as eunuchoid retrogressive changes accompanied in some cases by gynecomasty and regressions of the secondary sex characteristics. The thyroid plays here no active part. The basal metabolic rating is reduced and psychic manifestations are frequent. While libido may persist for a long time, it is gradually blunted and finally disappears. Occasionally, sexual hyperexcitability is observed. Neurasthenic and vasomotor disturbances ensue. Castrates often become dull and apathetic, lose initiative and develop phobias and depressions resembling serious organic disease. Individuals of neuropathic type are particularly affected. Practically all the manifestations of the female climacterium become manifest. These gradually abate but often persist stubbornly, rendering the victim incapable of concentration or work (important in evaluating compensation). Castration results in discordant glandular endocrine interactions. Testicular transplantation seems in some cases to be followed by good results. If this is not practicable, large doses of testicular extract should be tried. The advisability of the castration of individuals with criminal tendencies is discussed. This is not only unjust but tends to aggravate, in the author's opinion, the existing condition by engrafting a new symptom complex. As a whole, the work is an excellent compilation of instructive material.

Mental Hygiene in the Community. By Clara Bassett, Consultant in Psychiatric Social Work, Division on Community Clinics, the National Committee for Mental Hygiene, Inc. Cloth. Price, $3.50. Pp. 394. New York: Macmillan Company, 1934.

The author, a well trained worker in the field of mental hygiene, has accurately gaged the need for authoritative information concerning the hygiene of the mind and has made a laudable effort to fill the void. She has produced an excellent book. No doubt repeated disappointments resulting from the lack of mental hygiene consciousness in physicians, nurses, lawyers, parents, teachers, educators and others led the author into the error of making her book too inclusive. In twelve chapters there is discussed the relation of mental hygiene to medicine, nursing, social service, delinquency and law, parental education, the preschool child, education and teacher training, the church and theological training, industry, recreation and psychiatric institutions and agencies. The chapters on medicine,

nursing and education are especially good. They point a need that continues to hamper progress in these fields and indicate clearly that mental hygiene should not be an adornment but a closely integrated part of medicine, nursing and teaching. The remaining chapters are not as distinguished as these three, but they do deserve reading by those who are seeking to raise the community to higher levels. Even though the book is not a comprehensive picture of the relation of mental hygiene to all the phases of community life, it is a decidedly stimulating exposition of several of these phases and it is a valuable contribution to a subject that is still sadly neglected by the community. The index and bibliography are excellent, but the questionnaires at the end of each chapter are of doubtful value, since they give a pedagogic aspect to a book that is fortunately not a textbook.

Die Praxis der Nierenkrankheiten. Von Professor Dr. L. Lichwitz, Vorsteher der Inneren Abteilung des Montefiore-Hospitals, New York. Fachbücher für Ärzte, Band VIII. Herausgegeben von der Schriftleitung der Klinischen Wochenschrift. Third edition. Cloth. Price, 26 marks. Pp. 359, with 52 illustrations. Berlin: Julius Springer, 1934.

This is a scholarly exposition on diseases of the kidney. While the outline of the book has been changed little from its previous editions, the material has undergone a thorough revision and includes practically all the recent advances in the subject. Because of the exhaustive nature of its contents it will not be possible to give a detailed review in this column. The organization of the monograph allows the presentation of a vast amount of data to the reader in a concise form. The opening chapters concern themselves with definition and classification and the following chapters are on the anatomy and physiology of the kidney. It would seem that the reader might obtain a more comprehensive conception of the terms if he had first read the excellent chapters on anatomy and physiology. Few books on the kidney have presented the subject in such a fundamental way as this one does. The discussion of the physiologic and pathologic basis for separating the various disturbances of the kidney is particularly well done. The chapter on kidney function tests is as comprehensive an exposition of this subject as there is in print, yet the balance of the book is maintained and each subject receives its proper emphasis. The volume is deserving of a place on every reference library shelf. It is highly recommended for those who are desirous of having an intelligent understanding of the kidney and its derangements.

Hypochlorémie et accidents post-opératoires: Étude clinique, pathogénique et thérapeutique. Par H. Chabanier et C. Lobo-Onell. Paper. Price, 22 francs. Pp. 146, with 9 illustrations. Paris: Masson & Cie, 1934.

The authors go into considerable detail regarding postoperative complications, which they classify in four main groups: (1) those resulting from hemorrhage, (2) those caused by infectious complications either at the local operative site or in some distant part of the body, (3) those caused by mechanical disturbances, such as a mechanical intestinal obstruction and gastric dilatation, and (4) those due to various toxic manifestations. The last group is considered in most detail and comprises a discussion, for the most part, of disturbed blood chemistry, resulting in uremia, alkalosis, acidosis, hypochloremia and other chemical disturbances. The cause, prevention and treatment of these conditions are discussed and the underlying chemical factors considered. Emphasis placed on the preoperative and postoperative treatment of patients makes this book well worth reading.

Die normale und pathologische Physiologie der Milz. Von Dozent Dr. Ernst Lauda, Assistent der II. medizinischen Universitätsklinik in Wien. Paper. Price, 18 marks. Pp. 280, with 2 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1933.

For those who are interested in any phase of knowledge pertaining to the spleen, this work should be of great value. Its review of the literature is particularly international and well correlated and is systematized under headings especially adapted for ready reference without one's necessarily having to read the whole volume. The book is well indexed and therefore should be also of value for ready reference, especially for those wishing immediate orientation for further detail study. It deals with both experimental and clinical facts and presents no particular theory as a dominant theme. The author has apparently submerged his own conceptions for the sake of breadth of scope, despite the fact that he has been a voluminous contributor to the subject. Such an extensive review of literature would naturally not lend itself to illustration.

Handbook of Therapeutics. By David Campbell, M.C., M.A., B.Sc., Regius Professor of Materia Medica and Therapeutics, University of Aberdeen. Second edition. Cloth. Price, $4.75. Pp. 444, with 72 illustrations. Baltimore: William Wood & Company, 1934.

The second edition of this rather small, practical book, which "aims to supply the medical student with sufficient knowledge to treat disease rationally," has been somewhat enlarged to permit of revision of many articles in the light of more precise current knowledge. Among the new features included may be mentioned the articles on celiac disease and on sprue, the discussion of the use of phenylethylhydantoin in chorea, the ketogenic diet in urinary sepsis and in epilepsy, the high carbohydrate diet in diabetes, cortical extract in Addison's disease, and carbon dioxide in asphyxia and in whooping cough. Praiseworthy is the author's attempt to "present the truth stripped of unnecessary detail, and to give the student a clear conception of principles without obscuring his mind by a mass of detailed information that, after all, can be usefully acquired only at the bedside." This does not mean that he has eliminated all detail. The real problem in a book dealing with special therapeutics, i. e., the therapeutics of the various diseases, is what details to omit. As, unfortunately, this handbook of therapeutics deals with diseases in much the same way as do the books on the practice of medicine and most other books now on the market, it will probably not lead to the establishment of special courses on therapeutics, as might happen were a book to appear that would deal with therapeutics from the standpoint of pathologic physiology.

Medicolegal

Hospital's Contract to Furnish Medical Services Enforceable.—The Colgin Hospital and Clinic, a corporation, alleging that, at the request of the defendant insurance company and on its promise to pay, it had treated one J. T. King, sued to recover charges for hospitalization and physicians' fees for professional services. The insurance company contended that, as a corporation could not legally practice medicine, the plaintiff, a corporation, could not collect its charges for professional medical or surgical attention it rendered a patient. Judgment was given in favor of the Hospital and Clinic, and the insurance company appealed to the court of civil appeals of Texas, which certified certain questions to the Supreme Court of Texas. The Supreme Court seems to have referred the questions to the commission of appeals of Texas, section A.

In ordinary acceptation, said the commission of appeals, a sanatorium is an institution for the medical treatment of sick persons, as well as for ministering to their related needs. The statute expressly authorizes the formation of corporations for the "erection and maintenance of sanatoriums." Revised Statutes, art. 1302, subd. 6. Authority in such a corporation to provide medical treatment for patients, and to employ for that purpose persons duly licensed to practice medicine, is reasonably implied. It is true that article 742 of the Penal Code makes it a crime for any person to practice medicine without complying with the requirements prescribed in the Texas medical practice act. When those requirements are met, however, there is nothing in the statutes which implies a prohibition against a person so qualified engaging his services to another. In the present case, the Colgin Hospital and Clinic was vested with implied authority, in performing its corporate functions with respect to supplying medical treatment to its patients, to employ persons qualified under the medical practice act to practice medicine. The commission of appeals, therefore, was of the opinion that the Hospital and Clinic could sue to collect its charges for professional medical and surgical attention rendered a patient.

In the absence of pleading and proof to the contrary, it is not to be presumed, said the commission, that any person

employed by the corporation as an instrumentality for supplying treatment practiced medicine without a license or that the corporation committed an unlawful act in that respect. Such a violation of law must be affirmatively pleaded and proved as a defense in order to be of avail. The commission, therefore, deemed it unnecessary for the plaintiff to allege and prove that its physicians who rendered professional services were licensed to practice medicine in Texas, in the absence of any pleading or proof on that subject on the part of the defendant.

The opinion of the commission of appeals was adopted by the Supreme Court.—*Republic Reciprocal Ins. Assn. v. Colgin Hospital & Clinic (Texas), 65 S. W. (2d) 286.*

Medical Practice Acts: Admissibility of Deposition in Revocation Proceedings.—Proceedings to revoke Moormeister's license to practice medicine for the alleged performance of a criminal abortion were instituted by the director of the department of registration of the state of Utah in January, 1930. At the hearing in March of that year the only evidence presented to show the commission of the abortion was the deposition of a woman patient of the physician, which was admitted in evidence over the physician's objections. Subsequent to the hearing, but before the director could revoke the physician's license, which he indicated he intended to do, the third district court, Salt Lake County, on petition by Moormeister, enjoined the director from revoking the license. The director then appealed to the Supreme Court of Utah.

The law setting forth the rights and duties of the department of registration (Chapter 130, Laws of Utah, 1921, as amended by chapter 49, Laws of Utah, 1923), said the Supreme Court, does not authorize the department to take or to use a deposition in a proceeding had before it. One section of that law (section 5, chapter 130, Laws of 1921) authorizes the director to administer oaths, conduct hearings and subpena witnesses. It is well settled that the right to take a deposition in an action at law is entirely statutory and that statutes in derogation of common law are strictly construed. Consequently the authority of a court, board, commission or department to procure evidence by deposition, and to use the same, must be clearly conferred and authorized by statute. The power to issue a commission to take a deposition, or to use the same, is not implied from the power conferred on a board or commission to compel the attendance of and to examine witnesses. That the department in 1930 lacked this power was recognized by the legislature in 1933, when in adopting the Revised Statutes of 1933 it inserted in title 79, Department of Registration, chapter 1, section 30, a specific provision authorizing the department to take depositions. It follows, therefore, that there was no competent evidence adduced at the hearing on which the director could act.

The director contended that, notwithstanding the absence of competent evidence at the hearing, the district court was not warranted in affording injunctive relief because the physician had an adequate remedy at law; namely, an appeal from the order of revocation of the director to the district court, where a trial de novo could have been had. The physician contended, however, that the remedy by appeal is not plain, speedy and adequate. If the director, he argued, ordered his license revoked, his right to practice medicine would be suspended pending the outcome of an appeal, which might take several years. In this way he would be deprived of a valuable property right and suffer irreparable injury. If the physician, said the court, were in fact deprived of his right to practice pending a final determination of the case, it unquestionably would justify a court of equity in granting injunctive relief. In *Baker* v. *Department of Registration,* 78 Utah 424, 3 P. (2d) 1082, it was held that, in the absence of specific provisions in the medical practice act of Utah relating to appeals from orders entered by the department, an appeal may be taken to the district court where the case is tried de novo. The judgment of the lower court appealed from is vacated pending the determination of the appeal. In the present case, continued the court, Moormeister can, if and when the department revokes his license, serve notice of appeal on it, and the order of revocation will be automatically vacated. That being so, he will be free to practice his profession pending the outcome of the appeal. Thus the court concluded that the physician had an adequate remedy at law by appeal and that the district court was without jurisdiction to enjoin the director, and ordered the injunction dissolved.—*Moormeister v. Golding, Director of Registration Department (Utah), 27 P. (2d) 447.*

Workmen's Compensation Acts: Refusal to Undergo Operation.—If an employee receiving compensation for an injury sustained in the course of employment refuses to undergo a minor operation, simple, safe and reasonably certain to effect a cure, the continuing disability, said the Supreme Court of Nebraska, is to be considered as resulting from his own wilful act, and a suspension of compensation is warranted. Where, however, medical experts of similar skill and experience disagree as to the probable success of an operation, a refusal by an employee to submit to it is not unreasonable. What constitutes reasonable or unreasonable refusal on the part of an injured employee to submit to treatment, including minor surgical operations, is a question of fact to be determined from the evidence. The burden of proof is on the employer to prove that the tendered operation is simple, safe, and reasonably certain to effect a cure—*Simmerman v. Felthauser (Neb.), 251 N. W. 831.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Chicago, Sept. 9-14. Dr. William P. Wherry, 107 South 17th Street, Omaha, Executive Secretary.

American Association for the Study of Neoplastic Diseases, Washington, D. C., Sept. 6-8. Dr. Eugene Whitmore, 2139 Wyoming Avenue, N.W., Washington, D. C., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, White Sulphur Springs, W. Va., Sept. 6-8. Dr. A. M. Mendenhall, 23 East Ohio Street, Indianapolis, Acting Secretary.

American College of Surgeons, Boston, Oct. 15-19. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Congress of Physical Therapy, Philadelphia, Sept. 10-13. Dr. Nathan H. Polmer, 921 Canal Street, New Orleans, Secretary.

American Hospital Association, Philadelphia, Sept. 24-28. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. Kendall Emerson, 50 West 50th Street, New York, Executive Secretary.

American Roentgen Ray Society, Pittsburgh, Sept. 25-28. Dr. Eugene P. Pendergrass, 3400 Spruce Street, Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, Boston, Oct. 15-19. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, Secretary.

Association of Military Surgeons of the United States, Carlisle Barracks, Pa., Oct. 8-10. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 19-22. Mr. Harvey T. Sethman, 537 Republic Bldg., Denver, Executive Secretary.

Delaware, Medical Society of, Dover, Oct. 9-10. Dr. William H. Speer, 917 Washington Street, Wilmington, Secretary.

Idaho State Medical Association, Lewiston, Sept. 7-8. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, Indianapolis, Oct. 9-11. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 1-4. Dr. Hugh Wilkinson, 750 Minnesota Avenue, Kansas City, Kans., Secretary.

Kentucky State Medical Association, Harlan, Oct. 1-4. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Battle Creek, Sept. 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Nevada State Medical Association, Reno, Sept. 21-22. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

New England Surgical Society, Burlington, Vt., Sept. 28-29. Dr. J. M. Birnie, 14 Chestnut Street, Springfield, Mass., Secretary.

Northern Minnesota Medical Association, Brainerd, Sept. 10-11. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.

Ohio State Medical Association, Columbus, Oct. 4-6. Mr. Don K. Martin, 1005 Hartman Theatre Building, Columbus, Secretary.

Oregon State Medical Society, Corvallis, Sept. 27-29. Dr. L. Howard Smith, Medical Arts Building, Portland, Secretary.

Pacific Northwest Orthopedic Association, Seattle, Sept. 1. Dr. J. C. Brugman, 1215 Fourth Avenue, Seattle, Secretary.

Pennsylvania, Medical Society of the State of, Wilkes-Barre, Oct. 1-4. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Virginia, Medical Society of, Alexandria, Oct. 9-11. Miss Agnes V. Edwards, 1200 East Clay Street, Richmond, Secretary.

Washington State Medical Association, Spokane, Sept. 10-13. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Western Branch of American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. W. P. Shepard, 600 Stockton Street, San Francisco, Secretary.

Wisconsin, State Medical Society of, Green Bay, Sept. 12-14. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

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Clinical Observations on Aortic Stenosis. S. McGinn and P. D. White, Boston.—p. 1.
*Intravenous Injection of Methylene Blue in Man, with Reference to Its Toxic Symptoms and Effect on the Electrocardiogram. J. E. Nadler, H. Green and A. Rosenbaum, New York.—p. 15.
Therapeutic Efficacy of Bismuth Subnitrate in Arterial Hypertension. C. Brüen, New York.—p. 21.
*Iontophoresis of Acetyl-Beta-Methylcholine Chloride in Treatment of Chronic Arthritis and Peripheral Vascular Disease: Preliminary Report. J. Kovacs, New York.—p. 32.
Bone Marrow in Idiopathic Thrombopenic Purpura. J. S. Lawrence and R. E. Knutti, Rochester, N. Y.—p. 37.
Megakaryocytosis in White Mice with Spontaneous Mammary Carcinomas. W. C. Hueper, Philadelphia.—p. 41.
Leukocytosis After Parenteral Injection of Liver Extract. O. O. Meyer, W. S. Middleton and Ethel M. Thewlis, Madison, Wis.—p. 49.
Surgical Aspects of Pernicious Anemia, with Especial Reference to the Treatment. R. G. Hahn, Boston.—p. 60.
Relation Between Oral and Rectal Temperatures in Normal and Schizophrenic Subjects. H. T. Carmichael and F. E. Linder, Worcester, Mass., with the collaboration of the research staff of the Worcester State Hospital.—p. 68.
Insulin Therapy in Tuberculosis. A. L. Banyai and G. H. Jurgens, Wauwatosa, Wis.—p. 76.
Cinchophen Oxidation Test of Liver Function in Pulmonary Tuberculosis. J. B. O'Connor, H. Young, J. Steidl and F. H. Heise, Trudeau, N. Y.—p. 81.
Gaucher's Disease: Report of Case with Presentation of Table Differentiating the Lipoid Disturbances. A. Capper, H. Epstein and R. A. Schless, Philadelphia.—p. 84.
Arthritis, Anabolic Nutrition and Health: Study of Nourishment and Health of Joints. F. L. Burnett and F. R. Ober, Boston.—p. 93.
Survey of Human Intestinal Protozoan Parasites in Philadelphia. H. C. Hinshaw and Ethel M. Showers, Philadelphia.—p. 108.
Age Incidence Relations in Diabetes Mellitus. G. Pincus, E. P. Joslin and Priscilla White, Boston.—p. 116.
Present Status of Diagnostic Intradermal Test for Human Trichiniasis. R. D. Friedlander, Boston.—p. 121.

Toxic Symptoms of Methylene Blue.—Nadler and his associates observed that methylene blue has two actions. The first is the oxidation of hemoglobin to methemoglobin. The amount of methemoglobin found immediately following the injection of the average therapeutic dose is small. The second is that the drug, used intravenously, excites the individual and by its rapid elimination into the stomach and urine produces transitory gastro-intestinal and urinary irritation. The most frequent toxic symptoms observed were restlessness, paresthesias, a sense of "burning" in the mouth and stomach, pain in the chest and strangury. These manifestations usually subsided in from twenty-four to forty-eight hours. Leakage of a small amount of methylene blue about the vein gives rise to painful infiltration. Electrocardiographic studies show that methylene blue produces a reduction in the height or even reversal of the T wave frequently with lowering of the R wave. This suggests depression of the ventricular musculature. The amount of methemoglobin found and the subsequent decrease in hemoglobin are not of sufficient magnitude to account for the clinical picture described on the basis of anoxemia. Therefore the indiscriminate use of methylene blue may produce unpleasant results and be dangerous to the patient.

Iontophoresis of Acetyl-Beta-Methylcholine Chloride in Treatment of Arthritis.—Kovacs used a 1 per cent solution of actyl-beta-methylcholine chloride (1 Gm. in 100 cc. of water) in treating forty cases of chronic rheumatism, sixteen of rheumatoid arthritis, fourteen of osteo-arthritis, three of bursitis, three of sciatica and four of neuritis. Reinforced asbestos fabric paper is saturated with the solution and wrapped round the affected joints. A fairly large malleable metal plate is placed over the wet asbestos paper and connected to the positive pole of a galvanic generator. A dispersive, large, regular moist pad electrode is applied to the back or abdomen and is connected with the negative pole. The current is turned on and slowly increased to from 20 to 30 milliamperes, always being kept within comfortable toleration to the patient. Treatments of from twenty to thirty minutes are employed. The metal electrode or electrode clamps must not come in direct contact with the skin. Sweating was observed immediately after treatment and continues for from eight to ten hours. It is probably due to a direct action of the drug on the sweat glands or their nerve supply. The increased temperature of the skin was in cases in which a spasm of the peripheral blood supply was present. The increase of temperature varied from 4 to 10 degrees F. and remained for from two to four hours. There was an increase of the rate of the capillary flow without enlargement of the capillaries. The visible capillaries did not increase in number after treatment. Slight redness of the skin was produced, which remained for from one and one-half to two hours and was due probably to the enlargement of the deeper small arteriole vessels. A questionable slight increase in the local leukocyte count was noted. A feeling of warmth of the treated part lasted from twenty-four to seventy-two hours, for longer periods after repeated treatments, and in some cases for a whole week. There was a reduction of the swelling, increased mobility and relief of pain. A general effect causing flushing, sweating, an increase of pulse rate and salivation, slight lowering of blood pressure and evidence of intestinal peristalsis was observed when large areas were treated. The most promising results were obtained in the most stubborn cases of rheumatoid arthritis; 95 per cent of the cases showed improvement. In the osteo-arthritic type the results were likewise encouraging, giving definite improvement in 80 per cent of the cases. There was full recovery in the three cases of sciatica, in which diathermy and galvanic treatment had failed to give relief. In the three cases of bursitis, two responded quickly but in the third case the treatment failed to give relief. The four cases of neuritis reacted well to the treatment and in every case there was a quick full recovery. In the few cases of peripheral vascular disease treated, desirable results have been obtained: release of spasm with increased circulation.

American Journal of Ophthalmology, St. Louis

17: 579-682 (July) 1934

Scotoma of Glaucoma Simplex. R. I. Lloyd, Brooklyn.—p. 579.
Gonorrheal Ophthalmia: Statistical Report of One Hundred and Eighty-Nine Cases. J. I. Farrell, Utica, N. Y.—p. 591.
*Correlation Between Pupillary Area and Retinal Sensibility. M. Luckiesh and F. K. Moss, Cleveland.—p. 598.
Delimiting Keratotomy. H. Gradle and S. R. Gifford, Chicago.—p. 602.
Electrocautery in the Treatment of Corneal Ulcers. A. W. Morse, Butte, Mont.—p. 608.
Testing of Visual Acuity: II. Comparative Merits of Test Objects and New Type of Broken Circle as Test Object. C. E. Ferree and G. Rand, Baltimore.—p. 610.
Lipids of Retina, Brain and Blood. P. J. Leinfelder and P. W. Salit, Iowa City.—p. 619.
Ophthalmologic Survey of Illinois State School for the Blind. A. L. Adams, Jacksonville, Ill.; R. C. Gamble, S. R. Gifford and H. S. Gradle, Chicago.—p. 624.
Experimental Production of Detachment of the Retina. H. Weiss and J. N. Evans, Brooklyn.—p. 627.
Parinaud's Conjunctivitis. C. E. Harner, Long Beach, Calif.—p. 629.

Correlation Between Pupillary Area and Retinal Sensibility.—The analysis of Luckiesh and Moss of the experimental data from fifteen subjects indicates that the variation in retinal sensibility between the subjects is of the same order as the variation in the areas of the natural pupils. It is also evident that pupillary area and retinal sensibility are opposing factors with respect to their possible influence on the level of illumination selected by an introspective appraisal of seeing. In general, the subjects with the larger pupils usually have the lower retinal sensibility, and vice versa. Differences in the size of the pupil and in retinal sensibility account only in part for the wide differences in levels of illumination selected as "desirable" by various subjects for a given critical visual test, such as reading. Apparently these differences are not due chiefly to physiologic factors associated with the visual sense.

American Journal of Public Health, New York

24: 677-812 (July) 1934

Industrial Intoxication Following Skin Sorption. C. P. McCord, Cincinnati.—p. 677.
Pollution Indexes of Natural Bathing Places. W. L. Mallmann and A. Sypien, East Lansing, Mich.—p. 681.
Effectiveness of Vaccines Used for Prevention of Typhoid Fever in the United States Army and Navy. P. R. Hawley and J. S. Simmons, Washington, D. C.—p. 689.
New Life Table for the City of New Haven. J. H. Watkins, New Haven, Conn.—p. 710.
Metal Tank for Preparation of Mass Cultures of Anaerobic Bacteria. C. Weiss and E. J. Czarnetzky, San Francisco.—p. 713.
Modern Trends in Public Health Administration County Health Work. J. W. Mountin, Washington, D. C.—p. 715.
Use of Laymen in Official Public Health Nursing Programs. Mrs. Arch Trawick, Nashville, Tenn.—p. 722.
Complement Fixation Test for Syphilis: Standard Procedure of American Public Health Association. A. Wadsworth, Ruth Gilbert, Albany, N. Y., and N. M. Harris, Ottawa, Ont.—p. 727.
Place Variation in Death Rates from Puerperal Septicemia: Large Cities of the United States, 1922-1929. G. E. Harmon, Cleveland.—p. 732.
Purification of Vaccinia Virus. M. Schaeffer and Helen Nalibow, New York.—p. 736.
Sanitary Works of Indianapolis. C. K. Calvert, Indianapolis.—p. 739.
New Deal in Health Education. B. Brown, New York.—p. 743.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

31: 721-860 (June) 1934

Specificity of Pulmonary Consolidation in Tuberculous Patients (Epituberculosis): Resolution of Experimental Tuberculous Pneumonia. H. S. Willis, Northville, Mich.—p. 721.
Some Mechanical Factors of Gastric Physiology: Study I. Empty Stomach and Its Various Ways of Filling: Pressure Exerted by Gastric Walls on Gastric Content: Physical Changes Occurring to Foodstuff During Digestion. C. Gianturco, Rochester, Minn.—p. 735.
Id.: Study II. Pyloric Mechanism: Effect of Various Foods on Emptying of the Stomach. C. Gianturco, Rochester, Minn.—p. 745.
*Colon Studies: VII. Variations in Fixation of Cecocolon: Their Clinical Significance. J. L. Kantor and S. Schechter, New York.—p. 751.
Myocardial Calcification. J. J. Moore, Washington, D. C.—p. 766.
Spontaneous Pneumothorax in Infant, with Complete Recovery: Case. G. S. Reitter, Orange, N. J.—p. 770.
Tertiary Syphilis of the Esophagus: Report of Case Recognized Roentgenologically. L. F. Wilcox, Detroit.—p. 773.
Pyelo-Ureteritis Cystica: Report of Case. W. D. Bieberbach, P. H. Cook and R. H. Goodale, Worcester, Mass.—p. 778.
Encephalography Under Nitrous Oxide Anesthesia. R. W. Waggoner and L. E. Himler, Ann Arbor, Mich.—p. 784.
Carcinoma in Chronic Osteomyelitis. J. J. Collins, Thomasville, Ga.—p. 787.
Solution of Roentgen Diagnostic Problem in Chronic Appendicitis: Conclusions Based on Studies Covering a Period of Twenty Years and Including a Comparative Analysis of Roentgenologic, Clinical, Surgical and Postmortem Findings. T. Scholz, New York.—p. 792.
Roentgen-Ray Standards and Units: Standardizing Procedure of the National Laboratories.—p. 815.
*New Method for Treatment of "Bleeding Nipple" by Radium Implantation. M. Cutler, Chicago.—p. 819.
Roentgen Therapy of Actinomycosis. E. G. Smith, Boston.—p. 823.
Radium Salts and Emanation. F. B. Flinn, New York.—p. 830.

Variations in Fixation of the Cecocolon.—Kantor and Schechter believe that there is no need for operative intervention in atypical fixations of the colon except when actual evidence of intestinal obstruction is demonstrable. This would practically restrict such intervention to cases of volvulus and intussusception when excessive mobility is present and to cases of obstruction by bands when excessive fixation is present. The observation that hepatic flexure fixation is not associated with either gallbladder disease or gallbladder operations may be explained by the fact that in the majority of instances the fixation represents a congenital and not an acquired phenomenon. Similarly, the majority of cecal fixations may also be regarded as congenital rather than acquired in origin. The average vertical range of mobility of the hepatic flexure is 1⅔ inches. Normal variations in mobility range from more than 1 inch to less than 3 inches. The average vertical range of mobility of the cecum is 1⅓ inches. Normal variations range from 1 to 2½ inches. Hypermobility of the hepatic flexure may be said to exist when the vertical range is 3 inches or more, and hyperfixation when the vertical range is 1 inch or less. Hypermobility of the cecum may be said to exist when the vertical range is 2½ inches or more, and hyperfixation when the vertical range is 1 inch or less. The authors' study does not appear to reveal any marked clinical disturbances associated with the usual ranges of variations in fixation of the cecocolon as a whole, or of either of its terminations regarded separately. Such disturbances as are present seem to be adequately handled by the usual methods of conservative medical management, such as are implied in the competent treatment of the unstable colon. In none of their cases did the authors recommend surgical therapy.

Treatment of "Bleeding Nipple."—Cutler points out that there is ample proof available that an adequate dose of radiation administered to a papilloma by interstitial treatment results in destruction of the lesion and its replacement by fibrous connective tissue; therefore he suggests the implantation of removable radium element needles for the treatment of selected patients suffering from a serous or serohemorrhagic discharge from the nipple. The method offers the advantage of avoiding the radical procedure of breast amputation for a lesion which may not be cancer and usually is not cancer when treatment is administered and which may possibly never become cancer. It is a more complete procedure than local excision, as it treats the entire duct system of the breast and at the same time avoids surgical intervention. It should be adequate to destroy completely a recent duct carcinoma, especially if it is unaccompanied by a palpable tumor. The author reports two cases of discharge from the nipple treated by the implantation of removable platinum radium needles. In both instances the discharge has stopped and there is no clinical evidence of disease after twenty-four and eighteen months, respectively.

Canadian Medical Association Journal, Montreal

31: 1-118 (July) 1934

Staphylococcus Antitoxic Serum in Treatment of Acute Staphylococcic Infections and Toxemias: II. When No Staphylococcemia Is Demonstrable. C. E. Dolman, Toronto.—p. 1.
Early Diagnosis of Cancer of the Breast. E. M. Eberts, Montreal.—p. 9.
*Phosphatase in Obstructive Jaundice. A. R. Armstrong, E. J. King and R. I. Harris, Toronto.—p. 14.
Silicosis and Metabolism of Silica. E. J. King and Margery Dolan, Toronto.—p. 21.
Parathyroid Disturbances Following Thyroidectomy: Report of Case. A. G. McGhie, Hamilton, Ont.—p. 27.
Injection Treatment of Hemorrhoids. H. G. Pretty, Montreal.—p. 29.
Macular Aberration and Reversal of Macular Curvature. R. Kerry, Montreal.—p. 32.
Chronic Arthritis Treated by Crowe's Vaccine. J. A. Nutter and E. R. Watson, Montreal.—p. 34.
Hiccup. E. C. Noble, Toronto.—p. 38.
*Bacillus Alkalescens (Andrewes) Bacteremia with Serologic Confirmation: Case. D. H. Starkey, Montreal.—p. 42.
Estimate of Usefulness of Some Newer Anesthetics in Practice. W. Bourne, Montreal.—p. 44.
Spontaneous Subarachnoid Hemorrhage. W. I. Waite, Brantford, Ont.—p. 47.
Perforation of Gallbladder: Case Report. L. L. Wyse, Toronto.—p. 50.
Use of Caudal Anesthesia in Urology and Proctology. V. F. Onhauser, Winnipeg, Manit.—p. 51.
Observations on Actinomycosis. S. Gordon, Toronto.—p. 54.
Chorea Gravidarum: Case Report. S. Kobrinsky, Winnipeg, Manit.—p. 59.
Diabetes Mellitus in Twins. E. M. Watson, London, Ont.—p. 61.

Phosphatase in Obstructive Jaundice.—Armstrong and his associates produced obstruction to the common bile duct in nineteen dogs and determined daily the serum phosphatase activity and bilirubin content. The serum phosphatase in every case rose to progressively higher values each day following the obstruction, reaching from thirty to a hundred times the initial amount after six days. In two cases the obstruction was later relieved and the animals were allowed to recover. The recovery period was accompanied by a fall in the serum phosphatase until the initial value had been reached. Gallbladder bile contains large amounts of phosphatase, while bile from a fistula has been noted to contain even greater amounts. Feces from the dogs before and after obstruction possessed great phosphatase activity. The authors observed daily five hospital cases of proved obstructive jaundice in regard to the serum phosphatase activity. During the development of jaundice the serum phosphatase increased from day to day, while during the subsidence of the jaundice the value diminished, although somewhat more irregularly. When the patient recovered it reached nearly the range given by normal persons. The height to which the phosphatase activity rose in the human cases was considerably less than that attained in dogs. Three cases of experimentally produced latent hemolytic jaundice in dogs and two cases of latent hemolytic jaundice in man were investigated. No appreciable rise was observed in serum phosphatase.

Shigella Alkalescens Bacteremia.—Starkey reports a case of Shigella alkalescens infection in which there was a lack of agglutination reaction throughout the illness and the specific

systemic reaction to the infection could be demonstrated only by means of the precipitin and complement fixation reactions. In the absence of agglutination reactions it seems possible to the author that infection by Shigella alkalescens may be more common than is supposed, because in most cases, if a positive agglutination has not been observed when the patient's serum is tested, the organism has been discounted as a possible pathogen. The author's patient gives a history of constipation and ill health prior to the development of her first symptoms, and therefore the suggestion that the constipation might be considered to be the primary cause of the invasion of the urinary system by organisms from the intestine might be put forward. The mode of infection of the urinary tract by organisms commonly found only in the large intestine has not been satisfactorily explained, but in the present case there is a proved invasion of the blood stream. The urinary symptoms antedated the symptoms usually associated with a bacteremia, but it has been shown that even Shigella typhosus can be isolated from the blood stream of contacts many days before the development of any clinical signs of the disease (Conradi). Therefore it might be postulated that the organisms in the author's case invaded the blood stream from the intestine, giving no symptoms until they attacked the urinary system.

Johns Hopkins Hospital Bulletin, Baltimore

54: 383-466 (June) 1934

*Surgical Affections of the Pancreas Met with in the Johns Hopkins Hospital from 1889 to 1932, Including Report of Case of Adenoma of the Islands of Langerhans and Case of Pancreatolithiasis. W. F. Rienhoff Jr. and D. Lewis, Baltimore.—p. 386.

*Alleged Toxicity of Cod Liver Oil. W. M. Cox Jr. and A. J. Roos, Baltimore.—p. 430.

Occurrence of Cyclic Variations in Motor Activity in Relation to Menstrual Cycle in the Human Female. E. G. Billings, Baltimore.—p. 440.

Surgical Disorders of the Pancreas.—Rienhoff and Lewis summarize the results of 158 operative cases of pancreatic disease. Of the eighteen patients with acute pancreatitis, ten were well, one improved and seven died. Of the twenty patients with chronic pancreatitis, twelve were well, five improved and two were unimproved, one died and in this case death was due to a high intestinal obstruction, which had nothing to do with the operative procedure on the pancreas. In the carcinoma of the pancreas none of the patients were well, thirty-one were improved, thirty-nine were unimproved and thirty-nine died. Of the seven patients with pancreatic cysts, four were well and three were improved. Both patients who had pancreatic abscesses were well following operation. There was one case of pancreatic apoplexy and one of adenoma of the pancreas; both patients succumbed to the operative procedure. The authors report a case in which a pancreatic stone produced first an acute hemorrhagic pancreatitis, to be followed a year later by a chronic pancreatitis. The stone was removed and the patient has remained well for a period of ten years.

Alleged Toxicity of Cod Liver Oil.—Cox and Roos found no histologic evidence of any pathologic lesion in the hearts of rats fed for 130 days on a diet adequate in protein, salts and vitamins but containing 78 per cent of the calories as cod liver oil. The rate of growth of the rats so fed was definitely subnormal.

Journal of Bacteriology, Baltimore

27: 539-650 (June) 1934

Bacteriology of Swiss Cheese: I. Growth and Activity of Bacteria During Manufacturing Processes in the Swiss Cheese Kettle. W. C. Frazier, G. P. Sanders, A. J. Boyer and H. F. Long, Washington, D. C.—p. 539.

Genetic Significance of Dissociants of Staphylococcus Aureus. Rachel E. Hoffstadt and G. P. Youmans, Seattle.—p. 551.

Accessory Factor for Legume Nodule Bacteria: Sources and Activity. F. E. Allison and S. R. Hoover, Washington, D. C.—p. 561.

Dissociation in Yeasts. F. W. Fabian and N. B. McCullough, East Lansing, Mich.—p. 583.

New Thermophilic Actinomyces. A. Bernstein and H. E. Morton, Philadelphia.—p. 625.

Kansas Medical Society Journal, Topeka

35: 241-288 (July) 1934

X-Ray Therapy of Malignant Tumors. G. M. Tice, Kansas City.—p. 241.

Localization of Intraspinal Tumor by Means of Lipiodol Injection: Case Report with Operation and Recovery. C. C. Underwood, Kansas City, and F. R. Teachenor, Kansas City, Mo.—p. 246.

Cancer Survey of Kansas. F. L. Rector, Evanston, Ill.—p. 253.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

18: 369-432 (July) 1934

Certain Clinical Features of the Normal Limbus. B. Graves.—p. 369.

*Senile Cataract: Study of Biology and Chemistry of Crystalline Lens. D. B. Kirby and R. v. E-Wiener.—p. 388.

Variation and Refraction. W. R. Dunstan.—p. 404.

Biology and Chemistry of Crystalline Lens.—Kirby and E-Wiener present a study of the development, growth and structural changes, chemistry and nutrition of the normal lens in its relation to the etiology of senile cataract, review analogous age changes in structure and chemistry of bradytropic tissue, and discuss the structural changes observed in senile cataract and the chemistry and nutrition of such lenses. The theory that considers senile cataract germ-plasmatically determined is elaborated on. Pathologic changes in the structural configuration of the lens protein molecules predispose to a lack of resistance of the lens as an organ, to changes in permeability, to changes in water binding power and to fatty degenerations. These have an effect of promoting degenerative phenomena of denaturation, coagulation and precipitation of lens protein and of inducing abnormal infiltration of fat and deposition of inorganic material. This hypothesis considers senile cataract to be a genetically induced change in the structural configuration of the lens protein molecule, which makes it susceptible to the physical and chemical phenomena concerned in the production of cataract.

British Journal of Physical Medicine, London

9: 21-36 (June) 1934

Spa Treatment of Skin Disease, with Especial Reference to Sulphur Waters of Harrogate. S. E. Dore.—p. 22.

Spa Treatment of Skin Disease: Contribution to the Discussion at the Harrogate Conference. W. B. Watson.—p. 25.

Volcanic Mud: Its Origin and Uses. P. Veres.—p. 27.

Physical Methods in the Treatment of Disease. C. Nicory.—p. 29.

Journal of Laryngology and Otology, London

49: 429-492 (July) 1934

Protracted Fractional X-Ray Method (Coutard) in Treatment of Cancer of the Larynx. J. H. D. Webster.—p. 429.

Function of the Saccule. D. W. Ashcroft and C. S. Hallpike.—p. 450.

*Malignant Tumor of Vocal Cord with Unusual Histologic Features: Note. S. L. Baker and V. Lambert.—p. 461.

Treatment of Postoperative Pain in Chronic Sinusitis by X-Rays. H. Kisch and R. W. A. Salmond.—p. 464.

Malignant Tumor of Vocal Cord.—Baker and Lambert report a case in which a person, aged 59, complained of hoarseness for nine months, which became progressively worse after the onset. Laryngoscopic examination revealed a red sessile mulberry-like swelling occupying the greater part of the right vocal cord, with the exception of a free area at the anterior and posterior ends of the cord. The affected cord was still mobile, but the growth was producing mechanical malapproximation on phonation. The general macroscopic impression of the tumor was benign rather than malignant. A portion of the growth was removed for biopsy. Histologic examination suggested that the tumor was a sarcoma; therefore it was decided to do a laryngofissure with excision of the affected cord. Unfortunately, the patient collapsed and died in the early stages of anesthesia before the operation could be commenced, and no postmortem specimen was obtained. The sections examined showed a small nodule of tumor tissue measuring 6 by 3 mm. This was covered in part by stratified squamous epithelium. The examination of a section stained with hematoxylin and eosin showed, with the low power objective, numerous irregular, angular and spindle shaped cells lying in what appeared to be a fibrous tissue matrix. Among them occasional multinucleated giant cells were scattered. Most of the cells sent out processes, which merged with the general fibrillar matrix. The first impression produced by these appearances was that of a sarcoma; a more careful examination, however, led to the conclusion that the growth was in reality of epithelial origin, being perhaps best described as a polymorphic prickle cell carcinoma with spindle and giant cell formation.

Examination of further sections stained by various methods has confirmed this diagnosis and has further elucidated the cellular detail of the tumor. The feature which, in hematoxylin and eosin stained sections, suggests that the epithelial origin of the tumor is the peculiar angular and "prickly" contour of the majority of the cells. This is well seen in some of the larger cells. An examination of sections stained by van Gieson's stain and Weigert's iron hematoxylin, and Mallory's connective tissue stain, reveals the fact that the fibrillar matrix of the tumor is composed of a true connective tissue forming in one part an intercellular network of five wavy fibers and in another more compact masses separating groups of epithelial cells, and a complex network of interlacing processes derived from the epithelial cells themselves.

Journal of Tropical Medicine and Hygiene, London

37: 145-160 (May 15) 1934

Predators of the Culicidae (Mosquitoes): II. Predators of Adult Mosquitoes. E. H. Hinman.—p. 145.
Postmalarial Anemia with Marked Reticulocytosis: Case. E. D. W. Greig.—p. 150.
Further Note on Strain of Trypanosoma Brucei from Zululand. J. F. Corson.—p. 152.

37: 161-176 (June 1) 1934

Slaughter Stock and Human Infections. F. G. Cawston.—p. 161.
Studies on Ascaris: III: Etiology and Prophylaxis. R. Girges.—p. 162.
The Stroke in Malaria. S. de Silva.—p. 166.
Sporendonema Epizoum (Corda) Cif. et Red.: Entity Including Hemispora Stellata and Oospora D'Agatae. R. Ciferri and P. Redaelli.—p. 167.

37: 177-192 (June 15) 1934

Pellagra in Sudan. N. L. Corkill.—p. 177.
*Very Rare Case of Bancroftosis (Bancroft Filariasis): Summary and Conclusions. H. P. Froes.—p. 183.

Rare Case of Bancroftosis.—Froes observed a case in which a Negro, aged 30, who was admitted to the hospital for cardiac disease, had suffered before from malarial attacks, and at the examination of his blood a small number of young schizonts of Plasmodium falciparum were detected. At the examination of blood taken at night some microfilarias were found which the author identified as embryos of Wuchereria bancrofti. Such embryos were detected again in the blood obtained at different times (night and day) and were most numerous between the hours 2 and 4 a. m. and 9 and 11 a. m. Microfilarias were also found in ascitic fluid (obtained by puncture). The patient was suffering also from ascites (2 or 3 liters of fluid), 1,700 cc. being removed by puncture. The microfilarias detected in this fluid—nonhemorrhagic and nonchylous—were embryos of Wuchereria bancrofti. The author considers the present case as one of latent filariasis, as no complaint, no lesion or symptom could be attributed with certainty to the parasite.

Chinese Medical Journal, Peiping

48: 515-606 (June) 1934

Clinical Study of Cerebrospinal Fever, with Especial Reference to the Disease in Shanghai. F. D. Zau.—p. 515.
Epidemic of Cerebrospinal Meningitis in Canton in 1932. W. W. Cadbury.—p. 536.
Mycologic Study of Case of Actinomycosis: Report of Three Cases Observed in North China. T. L. Ch'in.—p. 551.
*Use of Benzylephedrine as Analgesic in Chaulmoogra Injections. C. T. Feng.—p. 563.
Soybean Digest Medium for Diagnostic Work. F. C. Lin.—p. 571.
Recent Advances in Anesthesia, with Especial Reference to Spinal and Intravenous Methods. C. Chang.—p. 577.
Comparative Study of the Clinical Valve of Solu-Salvarsan and Neoiacol. K. L. Yang.—p. 583.
Acute Opium Poisoning. C. P. Li.—p. 586.

Use of Benzylephedrine in Chaulmoogra Injections.—Feng found that the substitution of benzylephedrine for benzocaine in Johansen's benzocaine-chaulmoogra mixture showed marked resultant advantage. The benzylephedrine-chaulmoogra combination, containing only 0.1 per cent benzylephedrine base, appeared to fulfil the requirements of a nontoxic, non-habit forming, painless preparation for intramuscular administration, which will also remain chemically stable and aseptic over a long period. Tolerance for this preparation is two or three times as great as tolerance for the ordinary chaulmoogra preparations, with the advantage of painless and rapid absorption. The oral administration of this preparation has been suggested to certain workers who are interested in its use by this route.

Presse Médicale, Paris

42: 873-888 (May 30) 1934

*Acute Articular Rheumatism and Tuberculous Bacillemia: Personal Results in Ninety-Five Cases Studied by Löwenstein's Method. F. Meersseman and R. Lumaret.—p. 873.
Contraction of Iris in Mental Disorders. A. Barbé.—p. 876.
Is Tuberculosis Really Contagious? G. Carbognin.—p. 877.

Acute Articular Rheumatism and Tuberculous Bacillemia.—Meersseman and Lumaret, using the modified Loewenstein technic of blood culture described in the *Zentralblatt für Bakteriologie* (part 1, **120:**127 [Feb. 23] 1931), prepared 100 blood cultures of ninety-five rheumatic patients. Before taking this up, however, the authors used the same technic in thirteen confirmed tuberculous cases with only one positive result, in fifteen suspected tuberculous cases with entirely negative results and in six cases of erythema nodosum with negative results. Ninety-one of the ninety-five cases of articular rheumatism were of the acute or subacute type presenting the classic characteristics of Bouillaud's disease. There were one case of acute gonorrheal polyarticular rheumatism, two cases of clinically tuberculous rheumatism and one case of questionable syphilitic or tuberculous nature developing in a syphilitic patient. All these cases of Bouillaud's disease and the case of gonorrheal rheumatism gave negative results. The last three patients gave one positive and two doubtful results. The authors believe that the differences in results from those of Loewenstein are not assignable to technic alone but perhaps to a difference in clinical material. The authors' observations, however, give absolutely no argument in favor of the usual, frequent or even possible tuberculous etiology of Bouillaud's disease.

Schweizerische medizinische Wochenschrift, Basel

64: 609-640 (July 7) 1934. Partial Index

*Kyphoscoliosis and Spinal Cord. M. Borchardt.—p. 613.
Luxation Fracture of Cervical Vertebral Column. B. Breitner.—p. 617.
*Wound Closure in Goiter Operations. W. Capelle.—p. 617.
Conservative Surgery of Myoma. H. Guggisberg.—p. 622.
Operation on Testicle Retained in Inguinal Canal. E. Hagenbach.—p. 625.
*Simulation of Hemopericardium by Acute Traumatic Cardiac Dilatation. C. Henschen.—p. 626.
Leukemia and Pregnancy. P. Hüssy.—p. 629.
Posttraumatic Meningococcic Meningitis. F. Jakob.—p. 630.
Relation Between Coracoiditis and the Sympathetic. C. Julliard.—p. 636.

Kyphoscoliosis and Spinal Cord.—Borchardt maintains that in severe kyphoscoliosis there occasionally occur mild root and compression manifestations. They are easily overlooked, because they usually disappear again without resort to therapeutic measures. Severe injuries of the spinal cord are rare. If they appear, it is usually during the growth period as "late injuries" in the form of transverse myelitis or, in exceptional cases, in the form of serous spinal meningitis. These two disturbances are the result of circulatory disturbances in the spinal cord or its meninges. However, the existence of a severe, congenital or rachitic kyphoscoliosis is of course no protection against other disturbances that, independent of the existing malformation of the vertebral column, may cause an injury of the spinal cord. In addition to myelodysplasia and other conditions, two cases are reported in which the disease of the spinal cord had no connection with the malformation of the vertebral column. One patient had an intradural extramedullary spinal tumor that, of course, had no connection with the deformity of the vertebral column. The other patient had a vertebral osteitis fibrosa osteoplastica with tumor and cyst formation, which led to a compression of the spinal cord. The author thinks that the compression had no connection with the existing kyphoscoliosis. So far it is unknown that a deformity of the vertebral column leads to softening or degeneration of the spinal cord, but the author admits that it is not entirely impossible.

Wound Closure in Goiter Operations.—Capelle shows that the technic of goiter operations has been perfected to such a degree that primary closure of the wound predominates. If drainage becomes necessary, however, cosmetic demands and an effective drainage should not interfere with one another. The author suggests a method that combines the advantage of Kocher's incision and primary closure of the wound with improved discharge of the secretion by separating the opening for drainage from the surgical wound. He followed pointers

given by spondylitic abscesses of the cervical vertebral column. He found that they generally gravitate behind the sternocleidomastoid muscle toward the lateral cervical triangle and open outward in the region of the clavicular fossa beside the lateral rim of the sternocleidomastoid muscle. This space gives drainage possibilities also to the deeper portions of the goiter wound, as soon as the median cervical fascia has been opened toward it. Thus the drainage incision would be located below the external jugular, close to the outer rim of the clavicular insertion of the sternocleidomastoid muscle, in the cavity that lies between the insertion and the clavicle. In this region scars are less noticeable than on the anterior portion of the neck.

Simulation of Hemopericardium by Traumatic Cardiac Dilatation.—Henschen reports an acute traumatic cardiac dilatation that developed following a gunshot injury of the thorax. Whereas the clinical examination indicated the presence of a pericardiac hematoma, the postmortem examination revealed intactness of the cardiac muscle and of the pericardium and the absence of a pericardiac effusion of blood. The simulation of a hemopericardium could therefore be explained only by an acute traumatic dilatation of the heart. Judging from the type, the author suspects an injury of the extracardiac nerve trunks or a concussant lateral action of the shot on the heart (sort of "commotio cordis") or the two combined as the cause of the acute traumatic dilatation. He thinks that a reduction in the tonus by way of the nervous system may lead to a dilatation of the heart. He cites clinical and experimental observations indicating that atonic and myogenic dilatations may develop in the space of days, hours, or even in less than an hour (fifteen minutes or less). In the reported case the acute dilatation must have developed in the space of a few minutes. The author points out that Sauerbruch's statement to the effect that the hemocardium is clinically easily recognizable by the enormous widening of the cardiac dulness is not always true. On the one hand, the vertical shortening of the mediastinum produced by the elevation of the diaphragm and the transverse position of the heart connected therewith may indicate a hemopericardium as well as an acute cardiac dilatation. On the other hand, the acute traumatic cardiac dilatation may assume completely the character of a hemopericardium. Thus the surgeon enters the same misleading diagnostic paths as does the internist in the differential diagnosis of pericarditis and cardiac dilatation. The author thinks that, if the condition of the injured person permits, it would perhaps be possible to resort to the contrast visualization of the right heart by means of Forssmann's catheterization of the right auricle.

Archivio Italiano di Chirurgia, Bologna

36: 529-644 (May) 1934

*Senile Involution of Mammary Gland and Cystic Fibrosis. R. Gatta.—p. 529.
Osteomyelitis of Scapula. G. Bianchi.—p. 575.
Experimental Research on Action of Ultraviolet Rays in Healing by First and Second Intention of Wounds of Skin, Muscles and Parenchymatous Organs. E. Repetto.—p. 597.
*Contribution to Knowledge of Death from Intestinal Occlusion. A. G. Chiariello.—p. 628.

Senile Involution of Mammary Gland and Cystic Fibrosis.—Gatta observed in a number of subjects that there is a gradual disappearance of fibrillary connective tissue, which is replaced by adipose tissue in senile involution. Fixed limits cannot be assigned to involution: it begins after the menopause and sometimes before it and is complete only in extreme old age. During involution at any age the parenchyma presents proliferations in addition to regressive processes. The proliferations are especially numerous immediately after the menopause. The dilatations of the alveoli and of the galactoforous ducts which take place in the breasts after the menopause are attributed to a direct activity of the epithelium and not to a sclerogenous action of the connective tissue. They must be distinguished from the cysts due to stasis, which are rare and often absent, their genesis being totally different. They are formed in great abundance immediately after the menopause and become less numerous with the progress of the involution of the gland until complete regression. The clear or eosinophile cells are found in the female breast after the menopause; they are derived from the normal cells of the gland and represent their final stage. The aspect presented by the breast in its involution may be similar to that presented by cystic fibrosis. There are, however, always differences in the intensity of the proliferative processes, which allow for distinction between the two forms.

Death from Intestinal Occlusion.—Chiariello conducted four series of experiments on dogs for the purpose of confirming the importance of the loss of gastro-intestinal juices in the pathogenesis of death from intestinal occlusion. In the first series, after having resected the jejunum at a suitable distance from the ligament of Treitz, the author injected into the distal opening fixed to the skin a 1 per cent solution of sodium chloride; he obtained thus a survival which in one case lasted fifty-one days. In the second series the saline solution was replaced by distilled water, but the survival has been minimal. In the third series the saline solution was administered intravenously but the survival was not as striking as in cases of the first series, in that it never exceeded fifteen days. In the fourth series the administration of a solution of dextrose gave a minimal survival. These experiments demonstrate that the cause of death lies in the loss of the gastro-intestinal secretions, which would produce an increase of the nitrogen elements of the blood, an expression of the disintegration of the protein substances, and that the administration of saline solution through an intestinal fistula succeeds in delaying death for some time.

Beiträge zur Klinik der Tuberkulose, Berlin

85: 1-72 (June 25) 1934

Serial Roentgen Examinations for Pulmonary Tuberculosis in Army, Marine Corps and Police. H. J. Beese.—p. 1.
*Determination of Blood Cholesterol in Pulmonary Tuberculosis. Marie von Babarczy.—p. 9.
Several Biologic Actions of Old Tuberculin. D. Kanócz.—p. 15.
*Sero-Albuminous Expectoration Following Pleural Puncture. C. Mumme.—p. 20.
Nodule-Like Outlines on Pictures of Thorax. W. Glitsch.—p. 32.
Pathogenesis of Bronchiectasis: Pulmonary Cysts. M. Kartagener.—p. 45.
Observations on Behavior of Tuberculin Susceptibility in Children Endangered by Tuberculosis and in Those not Threatened. A. Viethen.—p. 50.
Failures in Pneumothorax Therapy and Its Causes. H. Mayrhofer.—p. 57.
Evaluation of Serum Protein Fractions in Tuberculosis. E. von Frölich.—p. 64.

Blood Cholesterol in Pulmonary Tuberculosis.—It is shown by von Babarczy that the behavior of the cholesterol content in tuberculosis is determined by the activity of the process, by the allergy and by the degree of tissue disintegration. The activity of the tuberculous process is accompanied by a reduction in the cholesterol content of the blood. The increased allergy is accompanied also by a reduction in the cholesterol values. However, the increased tissue disintegration produces an increase in the cholesterol content of the blood. Thus the actual cholesterol content of the blood in pulmonary tuberculosis is determined by the activity and the allergy that effect a decrease, and by the tissue disintegration that produces the opposite effect; namely, an increase.

Sero-Albuminous Expectoration Following Pleural Puncture.—Mumme describes the clinical aspects of sero-albuminous expectoration following pleural puncture. He rejects all pathogenic theories according to which the expectorate in sero-albuminous expectoration following pleural puncture is an expectorated pleural exudate. He maintains that the cause of sero-albuminous expectoration following pleural puncture is a local acute pulmonary edema, which develops in the prolongedly compressed and in the rapidly extended (during puncture) lung. Thus the expectorate is transudated blood serum. The development of the pulmonary edema following pleural puncture must be ascribed to degenerative changes on the capillary endothelium, also to mechanical and finally to angioneurotic factors. Epinephrine can prevent a sero-albuminous expectoration only when it is given early; that is, approximately fifteen minutes before the puncture is made. By introducing air into the pleural space and by thus renewing the pulmonary collapse, it proved possible to counteract a sero-albuminous expectoration and thereby save the patient. If in case of more extensive pleural punctures a part of the discharged fluid is replaced by air, the development of the pulmonary edema is prevented and with it also

the sero-albuminous expectoration. The author rejects the puncture treatment of the serous "idiopathic" pleural exudates, because the measure does not reduce the duration of the disturbance. In "idiopathic" serous pleurisy, puncture should be resorted to only if, disregarding vital factors immediately following the discharge of the exudate, collapse treatment is instituted by inducing a pneumothorax.

Münchener medizinische Wochenschrift, Munich

81: 1003-1044 (July 6) 1934. Partial Index

Prognosis of Complicated Deliveries and Its Consequences for the Physician. H. Guggisberg.—p. 1003.
Treatment of External Eye Diseases. A. Siegrist.—p. 1006.
*Significance of Occurrence of Tubercle Bacilli in Urine of a Patient. H. Wildbolz.—p. 1012.
*Disorders of Thyroid in Their Relations to Adjoining Organs. C. Wegelin.—p. 1018.
Status of Campaign Against Goiter in Switzerland. F. de Quervain.—p. 1020.
*Utilizability of Friction Method for Determination of Outlines of Organs. A. Bukovala.—p. 1026.

Significance of Tubercle Bacilli in Urine.—Wildbolz points out that formerly the presence of tubercle bacilli in the urine was considered indicative of a tuberculous disorder in the urogenital system. Some of the more recent investigations, however, have called the general validity of this rule into question. The author mentions several investigators who have reported cases of tuberculous bacilluria without the presence of tuberculous disease of the kidney. However, the majority of workers, studying the problem of tuberculous bacilluria, agree that, if it occurs at all, it is extraordinarily rare. The author states that the practitioner should assume the presence of a tuberculous disease of the urogenital organs when tubercle bacilli are found in the catheter urine. It is, of course, possible to mistake smegma bacilli for tubercle bacilli, but, if attention is given to the arrangement of the microorganisms, differentiation is readily possible, for the smegma bacilli are never close together but either are scattered or appear in loose groups. Moreover, they are generally shorter and plumper than the long and small tubercle bacilli. Because of their lipoid covering, the tubercle bacilli are usually massed together. The presence of other signs of urogenital tuberculosis dispels the doubts about the nature of the acid-fast bacilli. Such signs are, in men, infiltrations in the seminal vesicles and in the prostate or nodules in the epididymis; in women, infiltration of a ureter, which can be felt in the anterior vaginal vault. But, if in addition to the acid-fast bacilli no other tuberculous changes are demonstrable and a cystoscopic examination is not feasible, animal experiment should be resorted to. If the animals develop tuberculosis a urogenital tuberculosis can be assumed even if there are no other signs of tuberculosis, and the physician should see to it that the patient is subjected to a careful urologic examination. The good general condition and the absence of renal and vesical symptoms should not tempt the physician to regard the presence of tubercle bacilli in the urine as of minor importance, for not only is the patient in danger himself but he is also a danger to those who come in contact with him. The author maintains that the majority of patients whose urine contains tubercle bacilli have a caseous tuberculous lesion of the kidneys, genital tuberculosis being much less frequent. Since renal tuberculosis has only a slight tendency to scar formation, nonsurgical methods are of little avail, but surgical removal of the diseased kidney leads to complete cure in approximately 60 per cent of the cases. However, in some patients nephrectomy is contraindicated; this is the case particularly in bilateral tuberculosis, but even in unilateral renal tuberculosis nephrectomy may be inadvisable. Nonsurgical treatment should first be tried in all cases in which little or no pus is found in the urine and in which the function of the kidney is satisfactory.

Disorders of Thyroid in Their Relations to Adjoining Organs.—Wegelin shows that the inflammatory diseases of the thyroid (acute and chronic thyroiditis, tuberculosis, lymphogranulomatosis) develop as a rule hematogenously but may lead to involvement of the neighboring organs. On the other hand, in exceptional cases the changes may have an external origin; namely, when the protecting wall of the thyroid capsule is perforated. In benign goiter there develop in addition to displacements and compressions of the neighboring organs also adhesions with the larynx and the trachea. The author calls especial attention to the intralaryngotracheal goiter, in which the thyroid tissue grows even between the cartilages and underneath the mucous membrane of the larynx and the trachea. Malignant goiters frequently penetrate the capsule of the thyroid, but, on the other hand, the thyroid may be infiltrated and finally destroyed by neoplasms of the neighboring organs.

Friction Method to Determine Outlines of Organs.—Bukovala recommends the friction method for determination of the outlines of organs whenever the more simple methods, such as percussion, auscultation and palpation, fail. The stethoscope is placed with one hand on that region of the skin under which the organ is ordinarily found. At the same time the forefinger of the other hand makes scraping movements in a definite direction away from the stethoscope. On auscultation a scraping sound becomes perceptible. In order to exclude optic influences, the examiner should close his eyes. As soon as the friction reaches the point corresponding to the projection of the border of the organ on the skin, the auscultatory phenomenon disappears or changes in intensity and tone. If the same friction movements are made in various directions from the stethoscope, a number of points are detected the connection of which indicates the outline of the organ. The author recommends the friction method (1) for abdominal organs (liver, stomach and spleen), (2) for determining to what organs abdominal tumors belong and (3) for the determination of the lower limits of the heart.

Hygiea, Stockholm

96: 401-432 (June 30) 1934

*Treatment of Tuberculosis of Knee Joint in Adults (Especially Tuberculous Dropsy). H. Waldenström.—p. 401.
Report on Social-Hygienic Investigation in Norrbotten and Västerbotten Districts: Introductory Statement. N. Hellström.—p. 411.
General Observations Concerning Care of Homes, Personal Hygiene, and So on. G. Ankarswärd.—p. 418.

Treatment of Tuberculosis of Knee Joint.—In three fourths of Waldenström's twenty-five cases of microscopically established tuberculous synovitis treated during the last ten years, dropsy was noted at the outset. In five of the twenty-three cases treated conservatively from the start the treatment was completed, with good result in one case and a fairly good result in one case; in the seventeen, conservative treatment was discontinued and resection was done, in five cases after five years, in five cases after three years, and in eight cases after two years, with satisfactory ankylosis. Resection was done in two cases as soon as the tuberculosis was established. Because of the far longer and indefinite time required for conservative treatment, the far greater uncertainty as to the outcome, and the danger of recurrence in all these cases, the author advocates careful radical operation in every case of pathologico-anatomically established tuberculosis of the knee joint in adults.

Ugeskrift for Læger, Copenhagen

96: 685-714 (June 28) 1934

Mustard Gas. J. P. Skot-Hansen.—p. 685.
*Primary Epidemic Alveolar Pneumonia. A. A. Rasmussen.—p. 691.
Cinchophen Jaundice: Fatal Case. S. Horneman.—p. 694.
Keratosis of Palm and Sole. H. J. Pedersen.—p. 695.

Primary Epidemic Alveolar Pneumonia.—Rasmussen says that this epidemic pneumonia in the southern Faroe Islands in September 1933 was marked by sudden high fever, lasting from two to five weeks, with lytic fall, stethoscopic phenomena in the lungs, usually unilateral, demonstrable after from the third to the eighth day, headache, insomnia, low pulse frequency, often constipation, sometimes diarrhea, absence of stitch in the side, cough or expectoration and, in the four pregnant patients, abortion or premature delivery. Of the sixty-eight patients, 90 per cent were women in middle life or older; seven patients, or 10 per cent, died. The etiology of the disturbance is unknown.

CORRECTION

Duration of Ventricular Systole.—In the abstract of the article by Lian and his co-workers in THE JOURNAL, August 4, page 378, in the eighth line, the formula should read $K=\frac{D}{C\,(C+41)}$, instead of $K=\frac{D}{C\,(C-41)}$.